

AD-A264 639



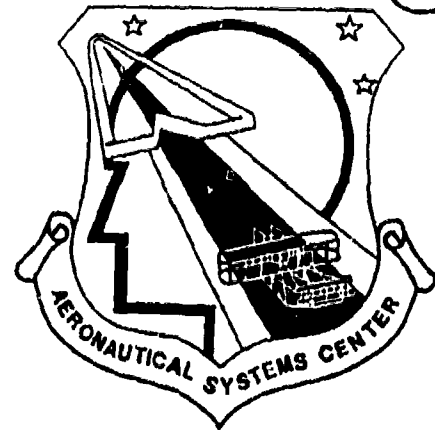
ASC-TR-93-5002

**GRAPHICAL COMPARISON OF  
U.S. STANDARD  
ATMOSPHERES AND MILITARY  
STANDARD CLIMATIC EXTREMES**

Joseph C. Zuppardo  
Flight Technology Branch  
Flight Systems Engineering Division

FEBRUARY 1993

Final Report for Period January 1990 to July 1991



Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE - Destroy by  
any method that will prevent disclosure of  
contents or reconstruction of the document

93 5 18 03 4



Integrated Engineering and Technical Management Directorate  
Aeronautical Systems Center  
Air Force Materiel Command  
Wright-Patterson Air Force Base OH 45433-7126

225342

93-11073

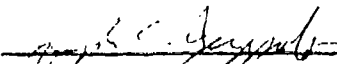


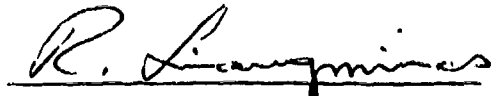
# NOTICE

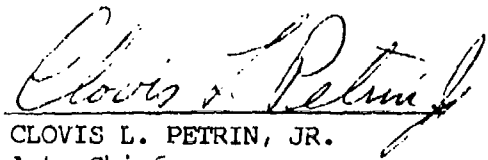
When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely Government-related procurement, the United States Government incurs no responsibility or any obligation whatsoever. The fact that the government may have formulated or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication, or otherwise in any manner construed, as licensing the holder, or any other person or corporation; or as conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

This report is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

  
JOSEPH C. ZUPARDO  
Aerodynamics & Performance Section  
Flight Technology Branch  
Flight Systems Engineering Division

  
RIMANTAS LIAUGMINAS, Chief  
Aerodynamics & Performance Section  
Flight Technology Branch  
Flight Systems Engineering Division

  
CLOVIS L. PETRIN, JR.  
Actg Chief  
Flight Systems Engineering Division

If your address has changed, if you wish to be removed from our mailing list, or if the addressee is no longer employed by your organization please notify ASC/ENFTA, WPAFB, OH 45433-7809 to help us maintain a current mailing list.

Copies of this report should not be returned unless return is required by security considerations, contractual obligations, or notice on a specific document.

PAGES \_\_\_\_\_  
ARE  
MISSING  
IN  
ORIGINAL  
DOCUMENT

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
<small>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.</small>				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE February 1993	3. REPORT TYPE AND DATES COVERED Final January 1990-July 1991		
4. TITLE AND SUBTITLE Graphical Comparison of U.S. Standard Atmospheres and Military Standard Climatic Extremes		5. FUNDING NUMBERS		
6. AUTHOR(S) Joseph C. Zuppardo				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)		8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Aerodynamics and Performance Section (ASC/ENFTA) Integrated Engineering and Technical Management Directorate Aeronautical Systems Center Air Force Materiel Command Wright-Patterson AFB OH 45433-7809		10. SPONSORING/MONITORING AGENCY REPORT NUMBER  ASC-TR-93-5002		
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited		12b. DISTRIBUTION CODE		
13. ABSTRACT (Maximum 200 words)  This report provides a compilation of the most commonly used atmosphere and climatic extremes. This compilation has been formed to aid the user in understanding the differences between the atmospheres. This may, therefore, be used as a tool to aid the user in choosing the best atmospheric model for their application.				
14. SUBJECT TERMS Atmospheric Profiles, Standard Atmosphere, Cold Day, Polar Day, Tropic Day, Hot Day, Climatic Extremes		15. NUMBER OF PAGES 270		
		16. PRICE CODE		
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UL	

# TABLE OF CONTENTS

SECTION	PAGE
1. 1962 U.S. STANDARD ATMOSPHERE .....	1
TEMPERATURE GRADIENT METHOD .....	1
TRUNCATED CHEBYSHEV EXPANSION METHOD .....	6
2. 1966 U.S. STANDARD ATMOSPHERE .....	10
CREATION OF TABLES .....	10
PRESENTATION OF GRAPHS .....	13
3. MIL-STD-210A .....	14
COLD AND HOT ATMOSPHERES .....	14
MIL-STD-210A ASSUMPTIONS .....	14
PRESSURE AT ALTITUDE .....	14
POLAR AND TROPICAL ATMOSPHERES .....	15
MIL-STD-210A ASSUMPTIONS .....	15
PRESSURE AT ALTITUDE .....	15
CREATION OF THE TABLES .....	15
4. MIL-C-5011B .....	16
TROPICAL DAY .....	16
5. MIL-STD-210C .....	17
HIGHEST AND LOWEST RECORDED TEMPERATURE AND DENSITY .....	17
ATMOSPHERIC PROFILES .....	18
HIGH TEMPERATURE AND LOW DENSITY WORLDWIDE .....	19
BIBLIOGRAPHY .....	20
APPENDIX A: TEMPERATURE PROFILES .....	A.1
APPENDIX B: PRESSURE PROFILES .....	B.1
APPENDIX C: DENSITY PROFILES .....	C.1
APPENDIX D: 1962 U.S. STANDARD ATMOSPHERE DATA FILES .....	D.1
APPENDIX E: 1966 U.S. STANDARD ATMOSPHERE DATA FILES .....	E.1
APPENDIX F: MIL-STD-210A DATA FILES .....	F.1
APPENDIX G: MIL-C-005011B DATA FILES .....	G.1
APPENDIX H: MIL-STD-210C DATA FILES .....	H.1

## LIST OF FIGURES

1. Temperature Profile for 1962 U.S. Standard Atmosphere .....	2
2. Percent Error in Pressure and Density In Gradient Method .....	5
3. Errors in representing the 1962 Standard to 100,000 ft by truncated Chebyshev expansion .....	9
4. Temperature profile for 15 deg N.L. ....	11
5. Temperature profile for 30 deg N.L. ....	12
6. Temperature profile for 60 deg N.L. ....	12
7. Temperature profile for 75 deg N.L. ....	13

## LIST OF TABLES

1. Approximation of 1962 Standard up to 80 km by Truncated Chebyshev Expansion .....	8
2. Acceleration values .....	10

DTIC QUALITY INSPECTED B

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

## LIST OF SYMBOLS

$p$	=	Pressure
$dp$	=	Change in pressure
$\rho$	=	Density
$g_0$	=	Gravity at sea level
$h$	=	Geopotential altitude
$dh$	=	Change in geopotential altitude
$R$	=	Specific gas constant
$T$	=	Temperature
$a1962$	=	1962 Standard Atmosphere
$ja30$	=	1966 January 30 deg N Lat.
$ju30$	=	1966 July 30 deg N Lat.
$jan60$	=	1966 January 60 deg N Lat.
$jac60$	=	1966 January cold 60 deg N Lat.
$jaw60$	=	1966 January warm 60 deg N Lat.
$jan75$	=	1966 January 75 deg N Lat.
$jac75$	=	1966 January cold 75 deg N Lat.
$jaw75$	=	1966 January warm 75 deg N Lat.
$anu15$	=	1966 Annual 15 deg N Lat.
$cold210a$	=	MIL-STD-210A cold atm.
$hot210a$	=	MIL-STD-210A hot atm.
$pol210a$	=	MIL-STD-210A polar atm.
$trop210a$	=	MIL-STD-210A tropical atm.
$trop5011b$	=	MIL-C-5011B tropical atm.

## **PREFACE**

This document was compiled to facilitate comparison of the U.S. Standard Atmospheres and the military specification/standard climatic extremes. The need for this arose with the implementation of MIL-STD-210C in weapon system requirements. Previous versions of this standard specified specific atmospheric extreme profiles for calculating air vehicle "trajectory" performance. The most recent revision (c) changed from this approach by providing a "shopping list" of atmospheric extreme profiles for air vehicle performance. The atmospheres contained in this report are:

1. 1962 U.S. STANDARD ATMOSPHERE
2. 1966 U.S. STANDARD ATMOSPHERES
  - a. 15 DEG NORTH LATITUDE
  - b. 30 DEG N.L. JANUARY
  - c. 30 DEG N.L. JULY
  - d. 60 DEG N.L. JANUARY
  - e. 60 DEG N.L. JANUARY WARM
  - f. 60 DEG N.L. JANUARY COLD
  - g. 75 DEG N.L. JANUARY
  - h. 75 DEG N.L. JANUARY WARM
  - i. 75 DEG N.L. JANUARY COLD
3. MIL-STD-210 A
  - a. COLD DAY
  - b. POLAR DAY
  - c. TROPIC DAY
  - d. HOT DAY
4. MIL-C- 5011B : TROPICAL
5. MIL-STD-210 C
  - a. HIGHEST RECORDED TEMPERATURE
  - b. HIGHEST RECORDED TEMPERATURE 1% HIGH
  - c. LOWEST RECORDED TEMPERATURE
  - d. LOWEST RECORDED TEMPERATURE 1%LOW
  - e. HIGHEST RECORDED DENSITY
  - f. HIGHEST RECORDED DENSITY 1% HIGH
  - g. LOWEST RECORDED DENSITY
  - h. LOWEST RECORDED DENSITY 1% LOW
  - i. HIGH TEMPERATURE AT 5 KM 1%
  - j. HIGH TEMPERATURE AT 5 KM 10%
  - k. HIGH TEMPERATURE AT 10 KM 1%
  - l. HIGH TEMPERATURE AT 10 KM 10%
  - m. HIGH TEMPERATURE AT 20 KM 1%
  - n. HIGH TEMPERATURE AT 20 KM 10%
  - o. LOW TEMPERATURE AT 5 KM 1%

- p. LOW TEMPERATURE AT 5 KM 10%
- q. LOW TEMPERATURE AT 10 KM 1%
- r. LOW TEMPERATURE AT 10 KM 10%
- s. LOW TEMPERATURE AT 20 KM 1%
- t. LOW TEMPERATURE AT 20 KM 10%
- u. HIGH DENSITY AT 5 KM 1%
- v. HIGH DENSITY AT 5 KM 10%
- w. HIGH DENSITY AT 10 KM 1%
- x. HIGH DENSITY AT 10 KM 10%
- y. HIGH DENSITY AT 20 KM 1%
- z. HIGH DENSITY AT 20 KM 10%
- aa. LOW DENSITY AT 5 KM 1%
- ab. LOW DENSITY AT 5 KM 10%
- ac. LOW DENSITY AT 10 KM 1%
- ad. LOW DENSITY AT 10 KM 10%
- ae. LOW DENSITY AT 20 KM 1%
- af. LOW DENSITY AT 20 KM 10%
- ag. HIGH TEMPERATURE AND LOW DENSITY WORLDWIDE

These atmospheres are presented in the report as columnar data and also presented graphically. The plots of the atmospheres are divided into temperature, pressure, and density. The plots are also displayed with the same range and geometric size so they can be overlaid and compared with one another.

In order to further consolidate all pertinent information into one document, each group of atmospheres is explained in detail by excerpting and summarizing portions of the source documents. For the MIL-STD-210C atmospheres, each subgroup is explained individually.

It is the intention that this report will ease the task of understanding the differences between these atmospheric profiles and in selecting the atmospheric profile most suitable in MIL-STD-210C for weapon system requirements or specifications.

## 1. 1962 U.S. STANDARD ATMOSPHERE

In approximating the 1962 U.S. Standard Atmosphere, two different methods are used. The two methods are the Temperature Gradient Method and the Truncated Chebyshev Expansion Method. A comparison between the two methods versus the actual atmosphere, as printed in The U.S. Standard Atmosphere, 1962, was performed to show the percent error in the two methods.

### TEMPERATURE GRADIENT METHOD

The temperature gradient method, as described in Anderson's Introduction to Flight, is derived as follows. The basis for this method is the hydrostatic equation, Eq.(1) :

$$dp = - \rho g_0 dh \quad (1)$$

This equation is then divided by the equation of state, Eq.(2) :

$$p = \rho RT \quad (2)$$

which results in Eq.(3) :

$$\frac{dp}{p} = - \frac{\rho g_0 dh}{\rho RT} = - \frac{g_0}{RT} dh \quad (3)$$

Considering the temperature profile of the 1962 U.S. Standard Atmosphere, Figure 1. , it is seen that there are two types of regions, the isothermal (constant-temperature) region and the gradient (variable-temperature) regions.

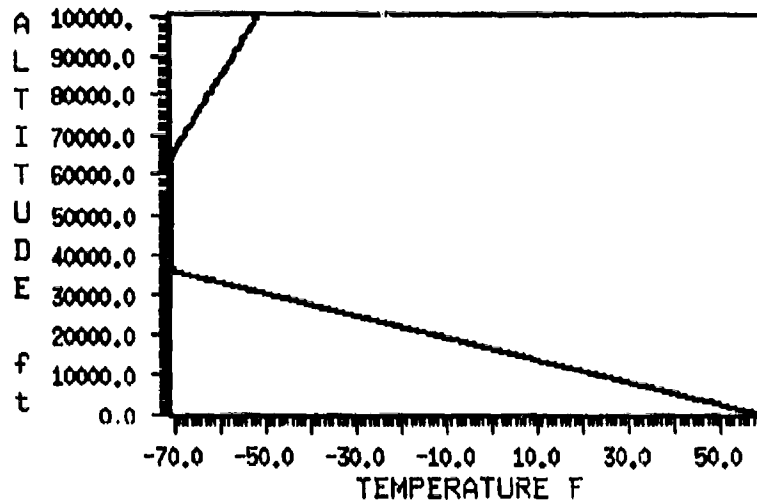


Figure 1. Temperature Profile for 1962 U.S. Standard Atmosphere

In the isothermal region where the altitude at the bottom of the layer is  $h_1$  and the pressure at the bottom of the layer is  $p_1$ , integrating Eq.(3) to obtain the pressure  $p$  at an altitude  $h$  yields Eq.(4) :

$$\int_{p_1}^p \frac{dp}{p} = - \frac{g_0}{RT} \int_{h_1}^h dh \quad (4)$$

Note that  $T$ ,  $R$ , and  $g_0$  are all constants (isothermal region) and, therefore, can be taken out of the integrand. The result is Eq.(5) :

$$\ln \frac{p}{p_1} = - \frac{g_0}{RT} (h - h_1) \quad (5)$$

Taking the antilog of both sides results in Eq.(6) :

$$\frac{p}{p_1} = e^{-(g_0/RT)(h-h_1)} \quad (6)$$

Dividing the equation of state at  $p$  by the equation of state at  $p_1$  results in Eq.(7). This shows that in the isothermal region, the ratio of  $p$  to  $p_1$  is equivalent to the ratio  $q$  to  $q_1$  :

$$\frac{p}{p_1} = \frac{qT}{q_1 T_1} = \frac{q}{q_1} \quad (7)$$

The result for the isothermal region may, therefore, be given as Eq.(8) :

$$\frac{p}{p_1} = \frac{q}{q_1} = e^{-(g_0/RT)(h-h_1)} \quad (8)$$

In the gradient regions, the temperature is not constant; therefore, the integration is not as simple as in the isothermal region. However, in these regions it is observed that the temperature variation is linear and can be equated geometrically as Eq.(9) :

$$\frac{T - T_1}{h - h_1} = \frac{dT}{dh} \equiv a \quad (9)$$

The constant  $a$ , known as the lapse rate, has a different value for each gradient region. From this relationship we get Eq.(10) and substituting it into Eq.(3) yields Eq.(11) :

$$dh = \frac{1}{a} dT \quad (10)$$

$$\frac{dp}{p} = - \frac{g_0}{aR} \frac{dT}{T} \quad (11)$$

Given that the temperature at the bottom of the region is  $T_1$  and the pressure at the bottom of the region is  $p_1$ , an equation to obtain the pressure  $p$  at a temperature  $T$  is obtained by integrating this equation. The result is Eq.(12) :

$$\int_{p_1}^p \frac{dp}{p} = - \frac{g_0}{aR} \int_{T_1}^T \frac{dT}{T} \quad (12)$$

Performing the integration and taking the antilog of both sides results in Eq.(13) :

$$\frac{p}{p_1} = \left( \frac{T}{T_1} \right)^{-g_0/aR} \quad (13)$$

This equation is a function of  $T$  and not of  $h$  so a relationship between  $h$  and  $T$  must be established. From Eq.(9), we obtain Eq.(14) :

$$T = T_1 + a(h - h_1) \quad (14)$$

To obtain a ratio of  $\rho$  to  $\rho_1$ , the equation of state at  $\rho$  is divided by the equation of state at  $\rho_1$  resulting in Eq.(15) :

$$\frac{p}{p_1} = \frac{\rho T}{\rho_1 T_1} \quad (15)$$

In this equation, however, the temperature is not constant and cannot be canceled out. Substituting this equation into Eq.(13) results in Eq.(16) :

$$\frac{\rho T}{\rho_1 T_1} = \left( \frac{T}{T_1} \right)^{-g_0/aR} \quad (16)$$

Dividing by  $T/T_1$  on both sides results in the final equation for the gradient regions, Eq.(17) :

$$\frac{\rho}{\rho_1} = \left( \frac{T}{T_1} \right)^{-[(g_0/aR) + 1]} \quad (17)$$

Using equations (8) and (17), a data table was created and compared with the actual atmosphere as printed in The U.S. Standard Atmosphere, 1962. The comparison shows the percent error in the pressure and density of the two atmospheres. This comparison is shown in Figure 2.

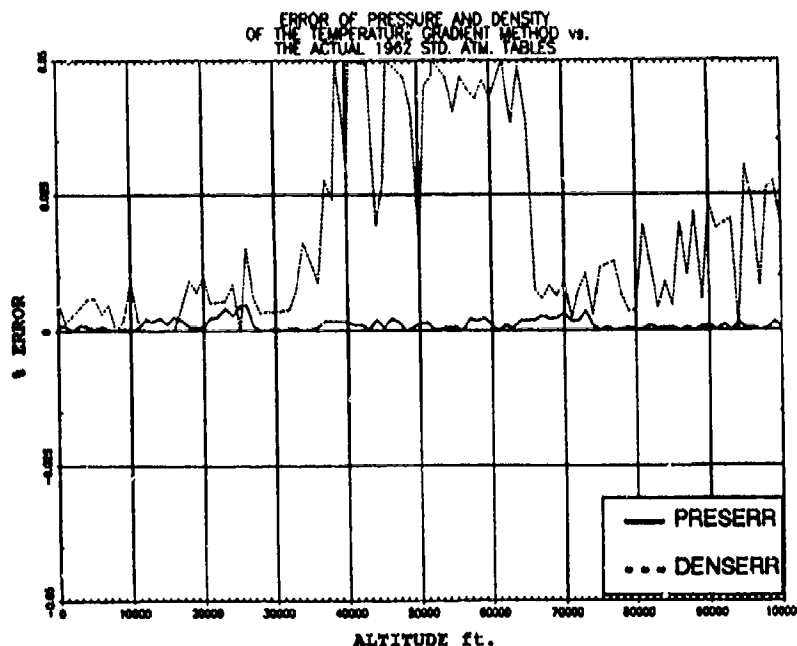


Figure 2. PERCENT ERROR IN PRESSURE AND DENSITY IN GRADIENT METHOD

## TRUNCATED CHEBYSHEV EXPANSION METHOD

The 1962 U.S. Standard Atmosphere can be approximated by use of the Truncated Chebyshev Expansion Method. This method is presented in the U.S. Standard Atmosphere Supplements, 1966. It is reproduced below for completeness:

As stated in the footnote . . . "The Chebyshev expansion of a given function  $f(x)$  on the interval  $-1 \leq x \leq 1$  is the Fourier half-range cosine-series expansion of the corresponding function  $F(\theta) \equiv f(\cos \theta)$  on the interval  $0 \leq \theta \leq \pi$ . The function  $\cos(k\theta) = \cos(k \cos^{-1}x) \equiv T_k(x)$  is expressible as a polynomial in  $x$ . The Chebyshev polynomials  $T_k(\xi)$  and  $C_k(\eta)$  are related by definition, according to:  $1/2C_k(2\xi) \equiv T_k(\xi), k=0,1,2$ "

In this application, "the independent variable  $x$  is related linearly to the geometric altitude  $Z$  by :

$$x = \frac{2Z}{Z_1} - 1 \quad \text{or} \quad Z = \frac{Z_1}{2}(x + 1) \quad (4.2)$$

As  $x$  varies from  $-1$  to  $1$ ,  $Z$  increases from  $0$  to  $Z_1$ . The variable  $f(x)$  in the present case is  $\ln(P/P_0)$  or  $\ln(\rho/\rho_0)$ , the natural logarithm (base  $e$ ) of the 1962 Standard pressure ratio or density ratio, respectively. For small errors, the (absolute) error in approximating the logarithm  $\ln r$  is approximately equal to the corresponding fractional error in the (pressure or density) ratio  $r$  itself, that is :

$$\ln r_a - \ln r = \ln\left(1 + \frac{r_a - r}{r}\right) \doteq \frac{r_a - r}{r} \quad (4.3)$$

where  $|(r_a - r)/r|$  is much less than unity and the subscript  $a$  refers to the approximate value of  $r$ . Therefore, a uniformly good polynomial fit to  $\ln r$ , in the sense of minimizing the maximum absolute value of the error  $(\ln r_a - \ln r)$  on the interval  $0 \leq Z \leq Z_1$ , is of interest here. The best polynomial in this sense can be approxi-

mated with a truncated Chebyshev expansion. This standard approximation, for  $\ln r$ , is of the form :

$$\ln r \doteq \frac{a_0}{2} + \sum_{k=1}^n a_k T_k(x) = \frac{1}{2} \left[ a_0 + \sum_{k=1}^n a_k C_k(2x) \right] \quad (4.4)$$

where :

$$a_k = \frac{2}{\pi} \int_0^\pi \ln[r(x)] \cos k\theta d\theta, x \equiv \cos \theta \quad (4.5)$$

and (with  $\eta \equiv 2x$ ) the  $C_k(\eta)$  can be obtained recursively from :

$$\begin{aligned} C_1(\eta) &= \eta, C_2(\eta) = \eta^2 - 2, \\ C_k(\eta) &= \eta C_{k-1}(\eta) - C_{k-2}(\eta), \\ &\quad k = 3, 4, \dots \end{aligned} \quad (4.6)$$

Alternatively, the  $C_k(\eta)$  have been tabulated by the National Bureau of Standards (1952). As before the approximations are not intended for application outside the interval  $0 \leq Z \leq Z_1$ . The first 15 Chebyshev series expansion coefficients  $a_k$  are presented in Table 1 for the 1962 Standard for the maximum altitude  $Z_1 = 80$  km."

The percent error between these approximations and the actual model are presented in Figure 3.

Table 1 Approximation of 1962 Standard up to 80 km by Truncated Chebyshev Expansion

Altitude range: 0-80 km Surface values: $P_{Z=0}=P_0$ , $Q_{Z=0}=Q_0$ Chebyshev series expansion coefficients, $a_k$ :		
k	$\ln \frac{P}{P_{Z=0}}$	$\ln \frac{Q}{Q_{Z=0}}$
0	-0.11385925E+02	-0.10960632E+02
1	-0.56837011E+01	-0.55717132E+01
2	+0.52666476E-01	+0.99116555E-01
3	-0.77884294E-01	+0.61044847E-01
4	-0.11004083E-00	-0.14304157E-00
5	+0.17572339E-01	+0.29492088E-02
6	+0.48546337E-02	+0.58789604E-02
7	+0.17694805E-02	+0.20421324E-02
8	-0.18165298E-02	+0.71033206E-02
9	-0.26635086E-02	-0.10314086E-01
10	+0.35685433E-02	+0.34100737E-02
11	-0.82257517E-03	+0.41764325E-02
12	-0.10363683E-02	-0.39151559E-02
13	+0.57053477E-03	+0.11227828E-02
14	-0.19023078E-03	-0.15751053E-02

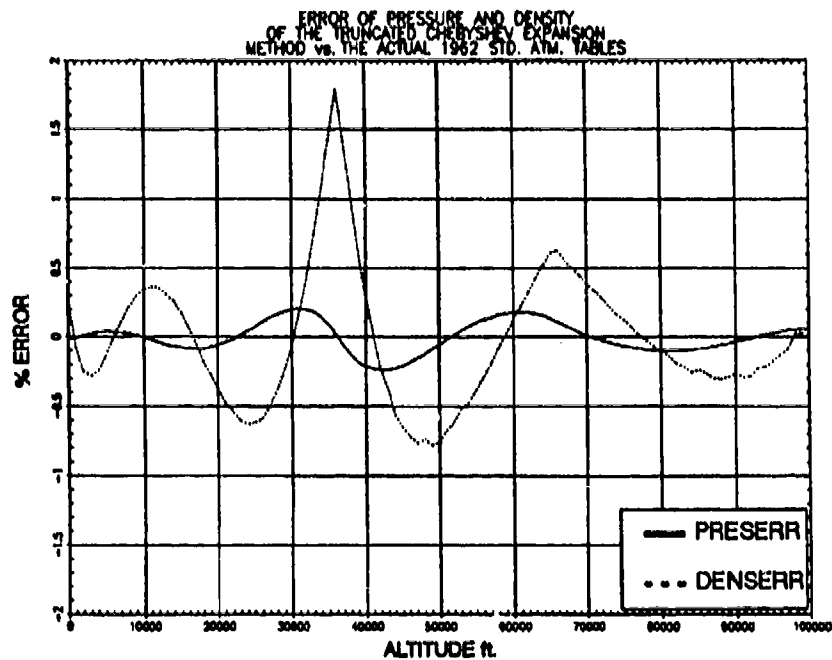


Figure 3. Errors in representing the 1962 Standard to 100,000 ft by truncated Chebyshev expansion.

## **2. 1966 U.S. STANDARD ATMOSPHERE**

### **CREATION OF TABLES**

The approximations to the 1966 U.S. Standard Atmospheres were obtained using the temperature gradient method. However, the basic constants were changed for each atmosphere to compensate for the changes in the radius of the earth, sea level pressure, temperature, and density. The most important constant that was changed was the acceleration due to gravity ( $g_0$ ). Since the radius of the earth changes with latitude, the acceleration due to gravity at sea level for that latitude had to be changed. The specific constants are shown in Table 2.

Table 2. Acceleration values

Latitude	Values of $g_0$ ( $\text{m sec}^{-2}$ )
0°	9.78036
15° N.	9.78381
30° N.	9.79324
45° N.	9.80665
60° N.	9.81911
75° N.	9.82860

The change in the acceleration due to gravity is very important in that it affects not only the ratio equations discussed in the previous section ( eqn(8), eqn(13) and eqn(17) ), but it also affects the ratio of geopotential altitude to geometric altitude.

Another change in the process to obtain the data tables was the change in the temperature profiles. For each specific atmosphere, the temperature profiles are broken down into

their isothermal and gradient regions. These regions are shown in Figure 4. through Figure 7.

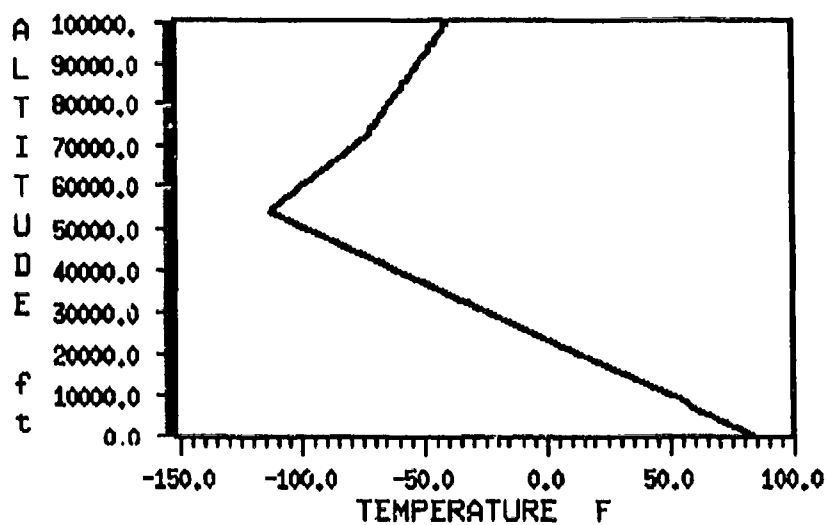


Figure 4. Temperature profile for 15 deg N.L.

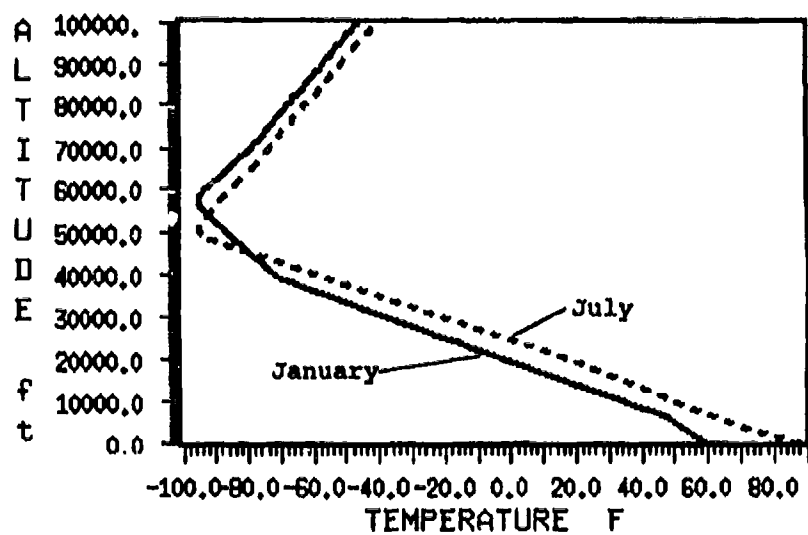


Figure 5. Temperature profile for 30 deg N.L.

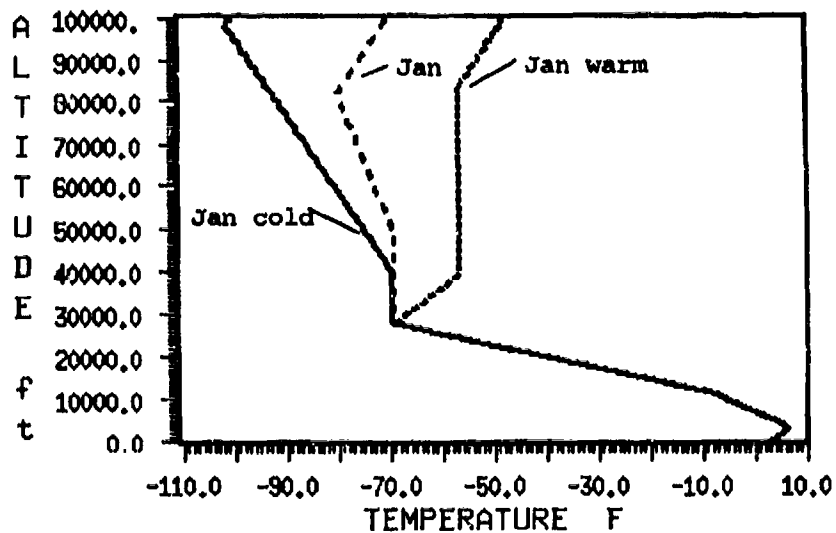


Figure 6. Temperature profile for 60 deg N.L.

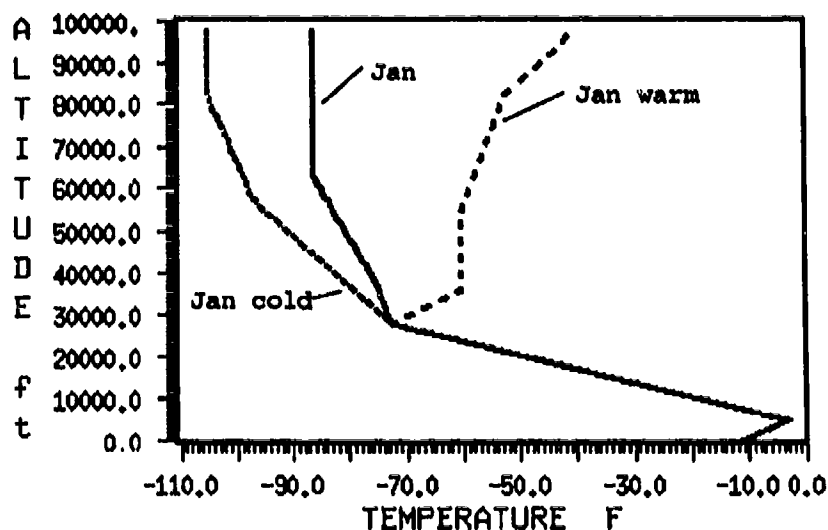


Figure 7. Temperature profile for 75 deg N.L.

Along with the change in the temperature profiles, the base pressure and density for each temperature region also had to be identified. The base temperature, pressure and density were all taken out of the U.S. STANDARD ATMOSPHERE SUPPLEMENTS, 1966.

### PRESENTATION OF GRAPHS

The graphs for the 1966 supplements, which are included in Appendices A–C, are grouped by latitude, i.e., all the atmospheres of the same latitude are presented on one graph. In this way, the similarities between them and the other atmospheric profiles can be compared such as the identities in the temperature layers up to certain altitudes. Presenting the atmospheres in this manner shows the similarities and differences between each. See Appendix pages A.2–A.6, B.2–B.7, and C.2–C.8.

### **3. MIL-STD-210A**

#### **COLD AND HOT ATMOSPHERES**

Key phrases from the Mil-Std-210A Cold and Hot Atmospheres discussion have been reproduced as follows:

"The cold and hot atmospheres provide probable extreme minimum and probable extreme maximum temperature-height data for the Northern Hemisphere. These Cold and Hot Atmosphere Tables are to be used as aeronautical design standards for consideration in determination of satisfactory operation of components and materials at extreme temperatures and in the design of weapon systems, sub-systems, or components that use or are exposed to the outside air, such as, engine and oil cooling systems, induction systems, etc. They can also be used for predicting equipment and compartment temperatures at altitude when operating in a horizontal plane and the increment of temperature rise above outside air temperature (OAT) is known. These cold and hot atmosphere tables cannot be used for determining engine and aircraft performance, aerodynamic characteristics, skin, compartment and equipment temperatures under transient climb conditions or for calculations associated with vertical ascents or descents of missiles or bombs."

#### **MIL-STD-210A ASSUMPTIONS**

1. "Pressure at sea level for both the cold and hot atmospheres is the same as standard sea level pressure, i.e., 29.92 inches mercury."
2. "Constant value of gravity 0 to 100,000 feet, i.e., 32.174 ft/sec<sup>2</sup>."
3. "Constant composition for atmosphere throughout altitude range."

#### **PRESSURE AT ALTITUDE**

"The pressure for the cold and hot atmospheres have been determined statistically from readings at various altitudes and therefore the pressure equations generally used are not applicable to these values. This minimizes the error in utilizing portions of the atmosphere from different latitude zones."

## **POLAR AND TROPICAL ATMOSPHERES**

Key phrases from the Mil-Std-210A Polar and Tropical Atmospheres discussion have been reproduced as follows:

"The polar and tropical atmospheres provide criteria for consideration in problems dependent upon a hydrodynamically consistent homogeneous polar or tropical atmosphere. These problems include determination of engine and aircraft performance, aerodynamic characteristics, skin, compartment and equipment temperatures under transient climb conditions, calculations associated with vertical ascents and descents of missiles or bombs. The atmospheres cover extreme latitude zones in the Northern Hemisphere only; therefore, " polar atmosphere represents an Arctic winter atmosphere rather than a true polar atmosphere for this publication."

### **MIL-STD-210A ASSUMPTIONS**

1. "The pressure at sea level at the base temperatures of the tropical atmosphere is the same as standard pressure, i.e., 29.92 inches of mercury. For the polar atmosphere an arbitrary value of 30.27 inches of mercury at  $-319.2$  ft was assumed."
2. "The value of gravity is constant, i.e.,  $32.174$  ft/sec<sup>2</sup>."
3. "The composition of the atmosphere is constant throughout the altitude range."

### **PRESSURE AT ALTITUDE**

"The empirical curves chosen represent hydrodynamically consistent atmospheres, permitting use of the hydrostatic equation in computing the pressure for the various altitude increments." The pressures are the same as standard day at given geopotential altitude.

### **CREATION OF THE TABLES**

All four tables were typed directly into the database from the tables given in the Mil-Std-210A. This was due to the fact that the Hot and Cold atmospheres are not hydrodynamically consistent atmospheres. Therefore, no code could be constructed to accurately reproduce these atmospheres. See Appendix pages A.7, B.8, and C.9.

#### **4. MIL-C-5011B**

##### **TROPICAL DAY**

The discussion of the tropical day atmosphere as stated in Mil-C-5011B is reproduced as follows:

"The tropical atmosphere is typical of that which might exist in the Northern Hemisphere and its properties are shown for geopotential altitudes up to 100,000 ft in increments of 500 ft. This atmosphere is hydrodynamically balanced and can be used for problem solutions involving engine performance, aerodynamic characteristics and calculations of true vertical velocity.

Note that these parameters are presented as a function of geopotential altitude rather than as a function of pressure altitude on a tropical day in order to allow calculation of true climb performance. A given pressure altitude, which is directly defined by the atmospheric pressure, occurs at a greater geopotential altitude on a tropical day than on a standard day because of atmospheric expansion and therefore pressure altitude can not be used for climb calculations directly." See Appendix pages A.8, B.9, and C.10.

## **5. MIL-STD-210C**

"This section provides climatic information for use in designing airborne and air projected combat equipment on a worldwide basis; these data are also applicable to ground equipment which is airborne (external to pressurized cargo compartments) or projected through the atmosphere. Values in this section represent "free air" conditions and not aerodynamically-induced conditions", which incidentally, is true of all atmospheres presented in this report. It should be noted that the tables in MIL-STD-210C are presented in metric units and geometric altitude. Since the organization for which this document was prepared deals primarily with U.S. aircraft, these comparisons were presented in English units and limited to 100,000 (geopotential) feet.

The percent highs and percent lows presented in the tables are known as the frequencies-of-occurrence.

"For both worldwide and regional applications, the frequency of occurrence of climatic elements (e.g., temperature) is based on hourly data wherever possible. From hourly data, it is possible to determine the total number of hours a specific value of a climatic element is equalled or exceeded. For example, if a temperature occurs, or is exceeded for an average of 7 hours in a 31-day month (744 hours), it has occurred roughly 1 percent of the hours in that month; if it occurs, or is exceeded, an average of 74 hours in the month, then it has a frequency-of-occurrence of 10 percent, etc. The value that is equalled or exceeded 1 percent of the time is referred to as the 1-percent value."

### **HIGHEST AND LOWEST RECORDED TEMPERATURE AND DENSITY**

"Climatic data in this section are values of extremes at each altitude regardless of the location or month in which they occurred. Therefore, the values provided for each altitude do not generally occur at the same time and place for layers greater than a few kilometers, and are not representative of the influence of the total atmosphere on a vertically rising or descending vehicle. These envelopes are most applicable for determining conditions at specific altitudes of concern for vehicles hori-

zontally traversing the atmosphere, or for determining which altitude may present the most severe adverse effect for each climatic element."

The atmospheric profiles that are included in this section are:

1. HIGHEST RECORDED TEMPERATURE
  2. HIGHEST RECORDED TEMPERATURE 1% HIGH
  3. LOWEST RECORDED TEMPERATURE
  4. LOWEST RECORDED TEMPERATURE 1% LOW
  5. HIGHEST RECORDED DENSITY
  6. HIGHEST RECORDED DENSITY 1% HIGH
  7. LOWEST RECORDED DENSITY
  8. LOWEST RECORDED DENSITY 1% LOW
- See Appendix pages A.9–A.10, B.10–B.11, and C.11–C.12.

### **ATMOSPHERIC PROFILES**

"Climatic data in this section are presented as realistic profiles associated with extremes at specified levels. They are primarily intended for use in the design of vehicles that are vertically traversing the atmosphere, or other considerations for which the total influence of the atmosphere is needed.

The temperature and density profiles from the surface to 80 km are based on 1– and 10–percent warm and cold temperatures and 1– and 10–percent high and low densities at 5, 10, 20 km... at the worst locations in the world (except Antarctica) during the most severe month. The temperature profiles include associated densities, and the density profiles include associated temperatures. It is recommended that the 1–percent value be initially considered for these temperature and density profiles."

The atmospheric profiles that are included in this section are:

1. HIGH TEMPERATURE AT 5 KM 1% AND 10%
2. HIGH TEMPERATURE AT 10 KM 1% AND 10%
3. HIGH TEMPERATURE AT 20 KM 1% AND 10%
4. LOW TEMPERATURE AT 5 KM 1% AND 10%
5. LOW TEMPERATURE AT 10 KM 1% AND 10%
6. LOW TEMPERATURE AT 20 KM 1% AND 10%
7. HIGH DENSITY AT 5 KM 1% AND 10%
8. HIGH DENSITY AT 10 KM 1% AND 10%
9. HIGH DENSITY AT 20 KM 1% AND 10%

- 10. LOW DENSITY AT 5 KM 1% AND 10%
- 11. LOW DENSITY AT 10 KM 1% AND 10%
- 12. LOW DENSITY AT 20 KM 1% AND 10%

See Appendix pages A.11–A.18, A.20–A.25, B.12–B.19, B.21–B.26, C.13–C.20, and C.22–C.27.

### **HIGH TEMPERATURE AND LOW DENSITY WORLDWIDE**

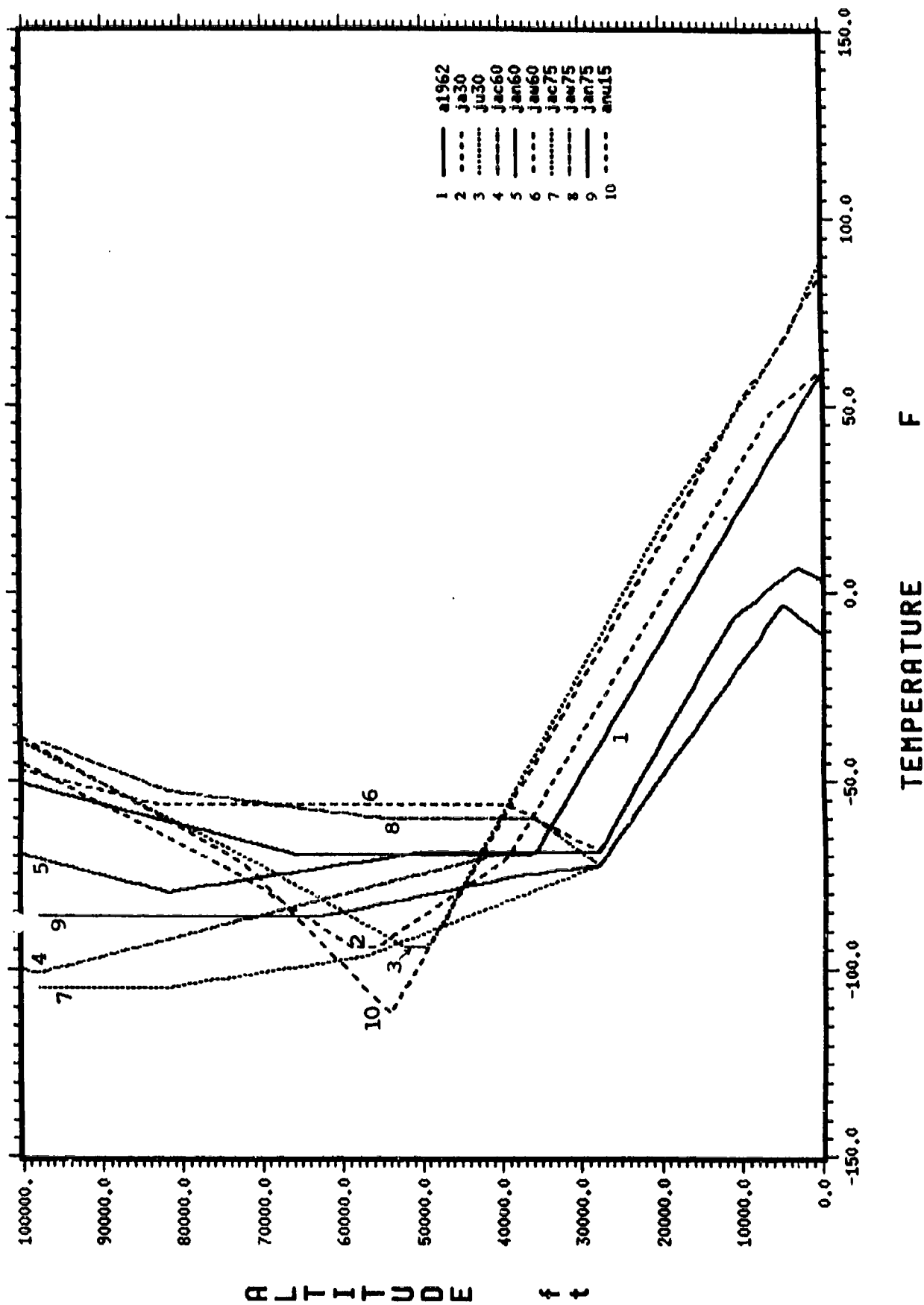
This table was constructed from two tables one being the Supplementary High Temperature Values for the Worldwide Air Environment to 80 km and the second being the Supplementary Low Density Values for the Worldwide Air Environment to 80 km. These two tables were merged using the same geometric altitude values. The two tables used are the supplements to the Highest Recorded Temperature 10% High and the Lowest Recorded Density 10% Low tables. See Appendix pages A.19, B.20, and C.21.

## **BIBLIOGRAPHY**

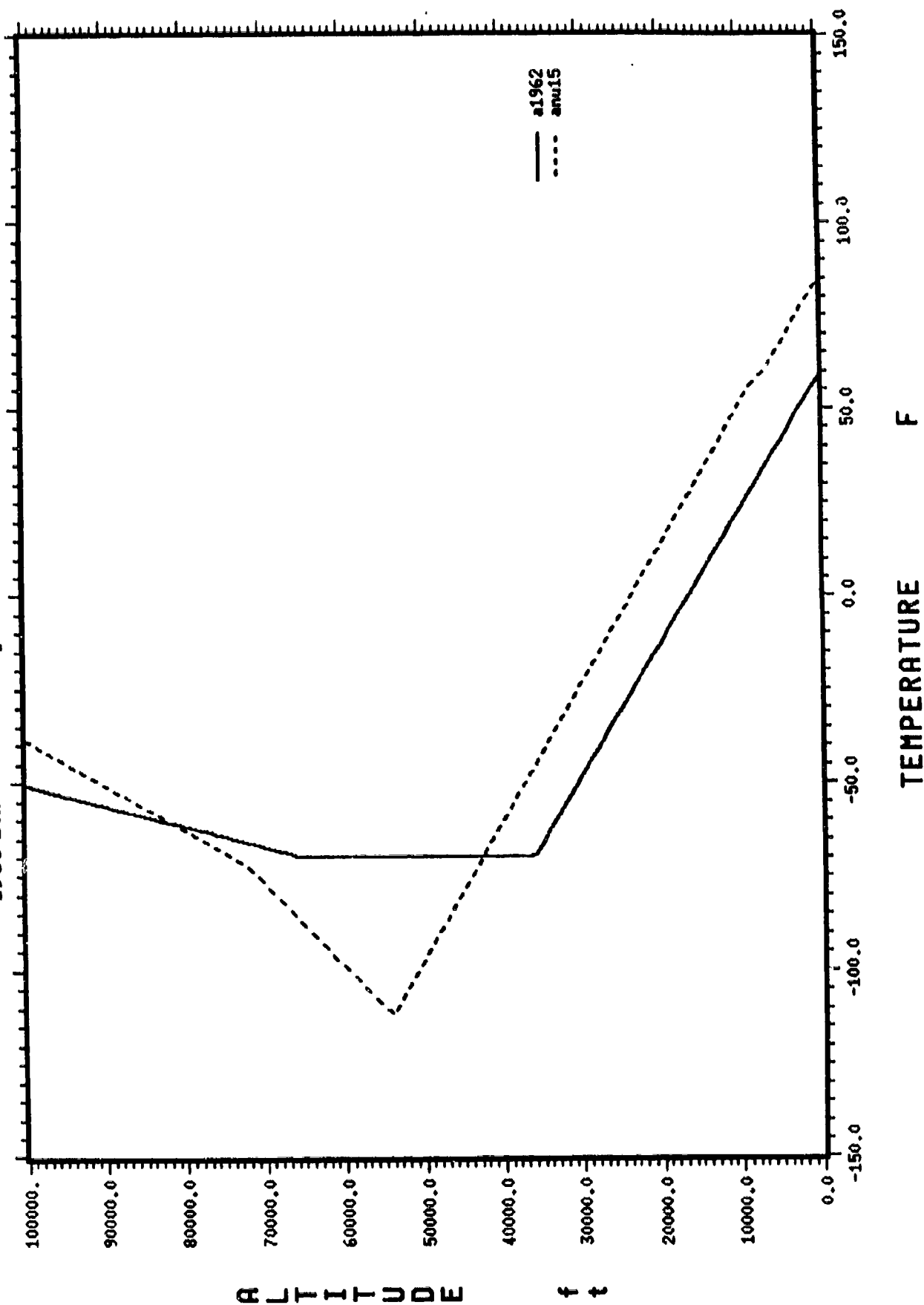
1. AFSC/ASD/ENESS, Wright-Patterson AFB. Standard Aircraft Characteristics and Performance, Piloted Aircraft (Fixed Wing). MIL-C-005011B, U.S. Government Printing Office, Washington, D.C., 21 June 1977.
2. Anderson, J. D., Jr. Introduction To Flight (Second Edition). New York: McGraw-Hill, Inc., 1985.
3. Climatic Extremes For Military Equipment. MIL-STD-210A, U.S. Government Printing Office, Washington 25, D.C., 2 August 1957.
4. Climatic Information To Determine Design And Test Requirements For Military Systems And Equipment. MIL-STD-210C, 9 January 1987.
5. Environmental Science Services Administration, National Aeronautics and Space Administration, United States Air Force. U.S. Standard Atmosphere Supplements, 1966. Washington, D.C. 1966.
6. National Aeronautics and Space Administration, United States Air Force, United States Weather Bureau. U.S. Standard Atmosphere, 1962. Washington, D.C., 1962.

**APPENDIX A.**  
**TEMPERATURE PROFILES**

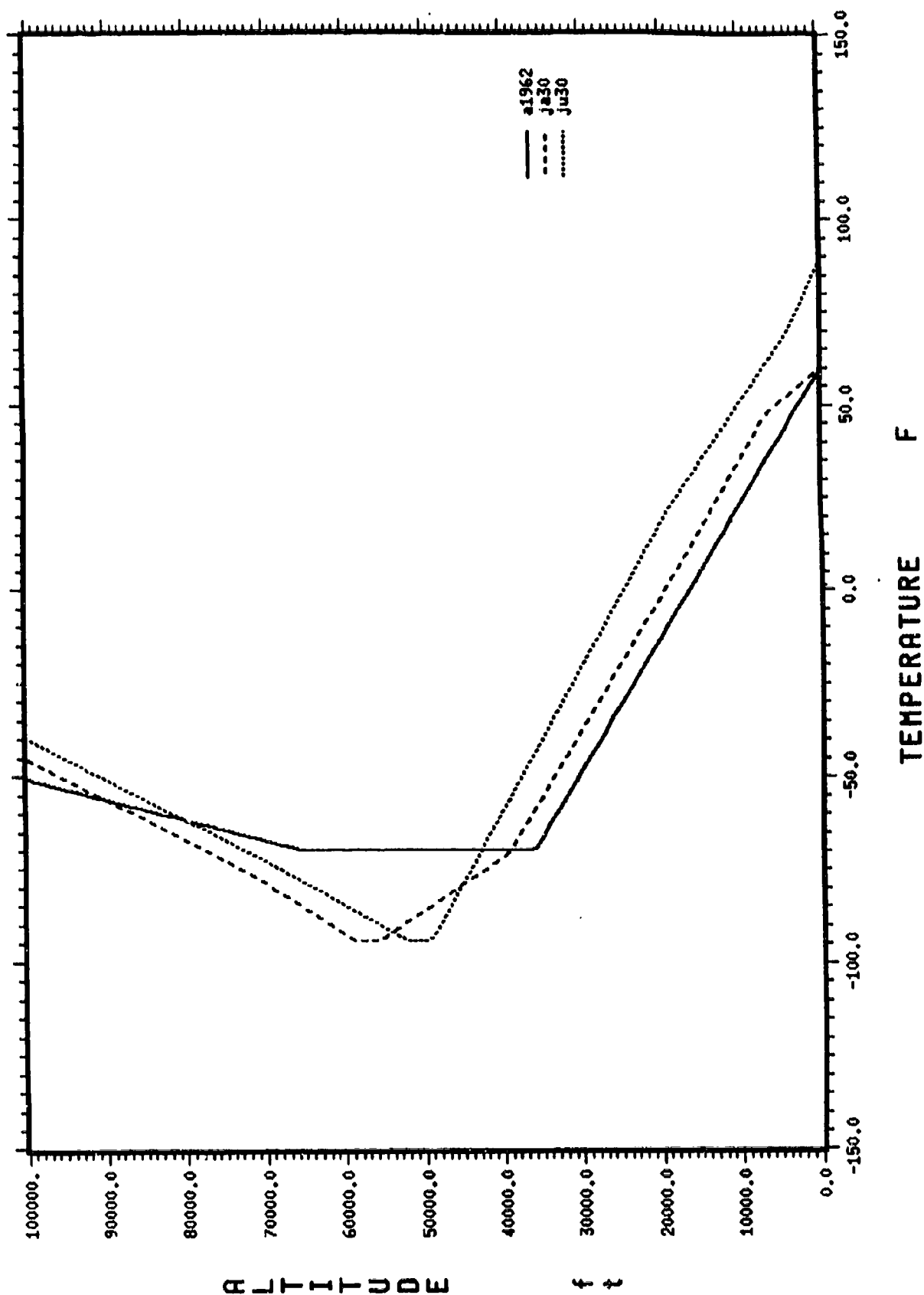
# TEMPERATURE COMPARISON 1966 Standard Atmosphere 15°-75° N. Lat.



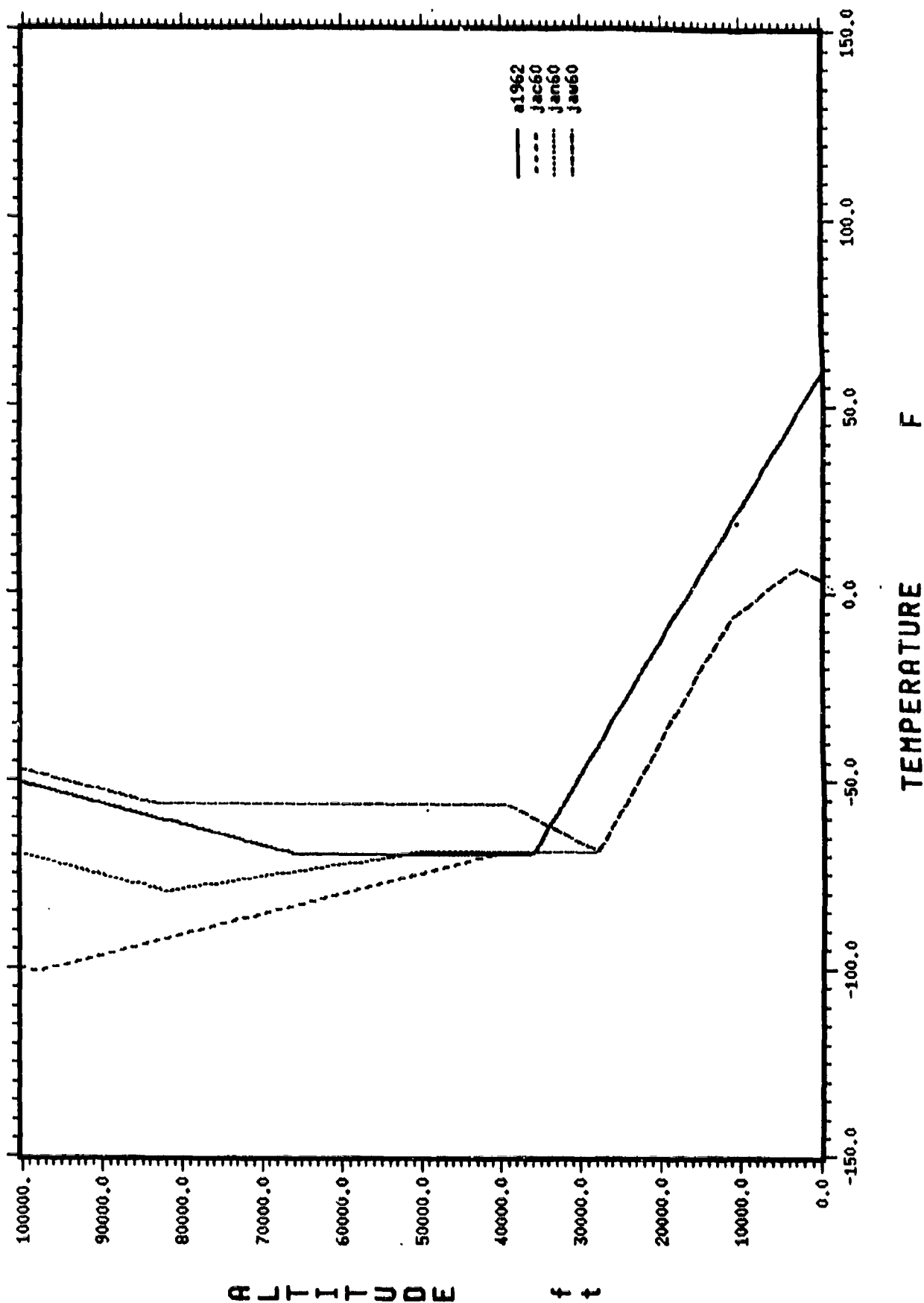
# TEMPERATURE COMPARISON 1966 Standard Atmosphere 15° N. Lat.



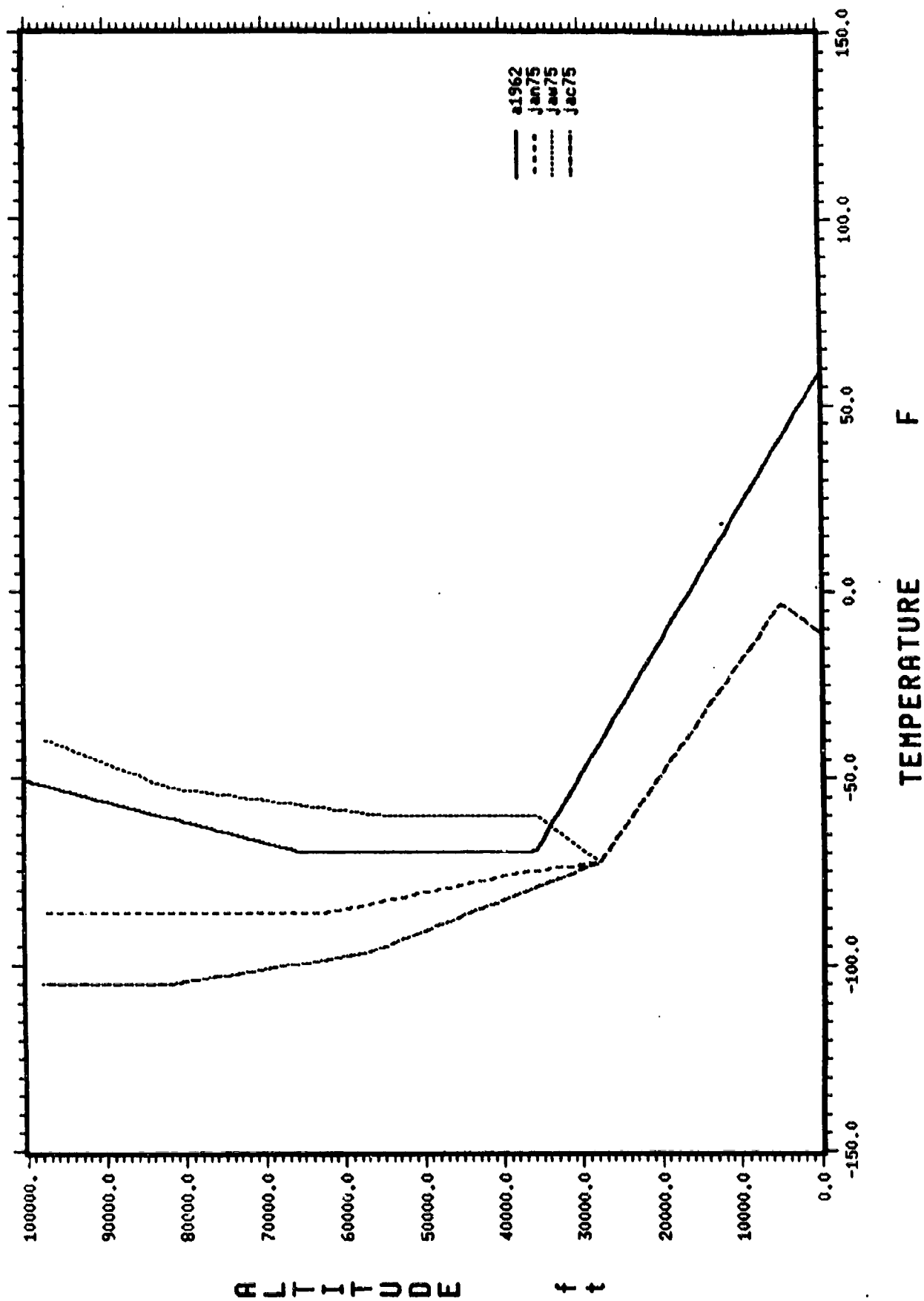
# TEMPERATURE COMPARISON 1966 Standard Atmosphere 30° N. Lat



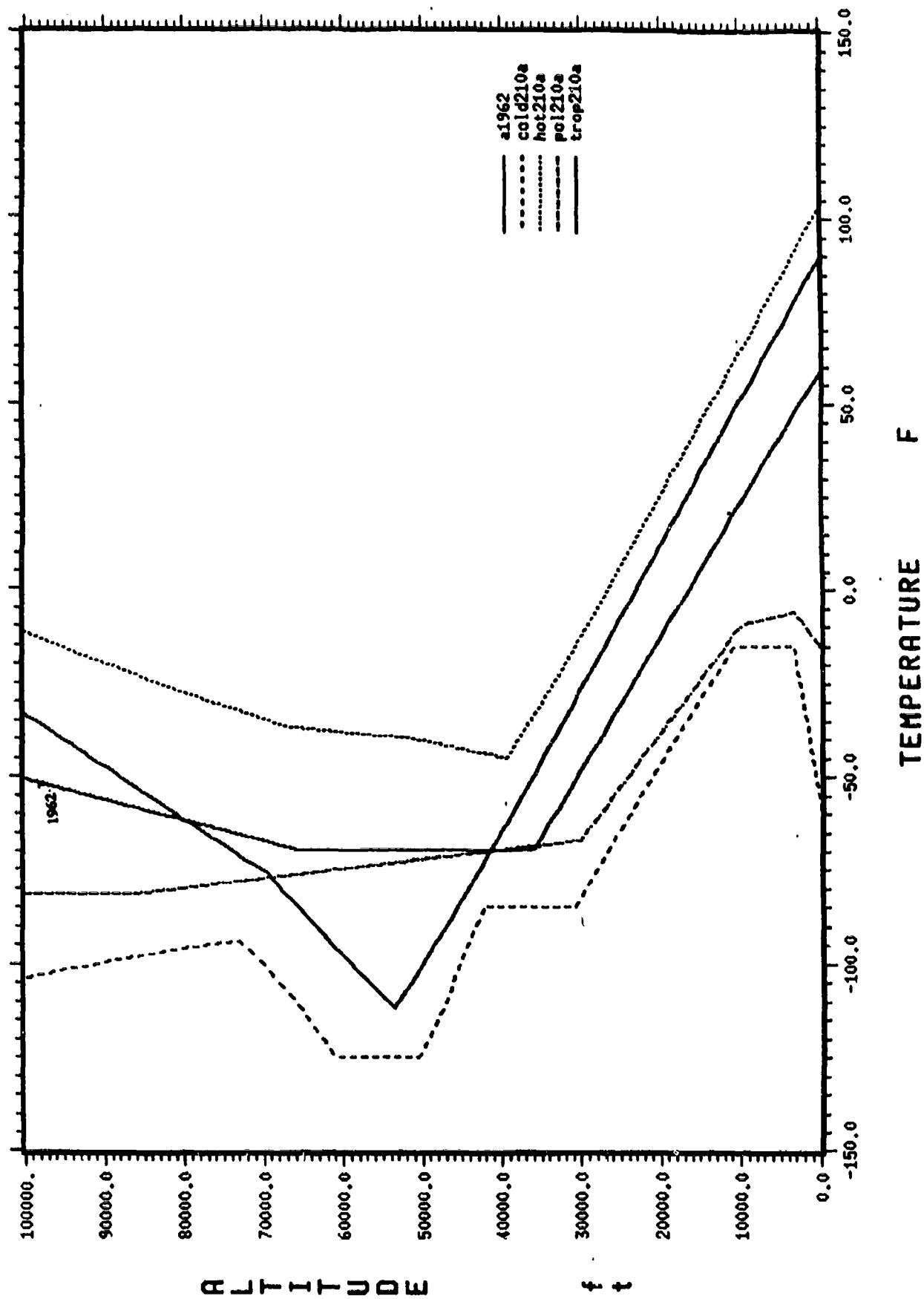
# TEMPERATURE COMPARISON 1966 Standard Atmosphere 60° N. Lat.



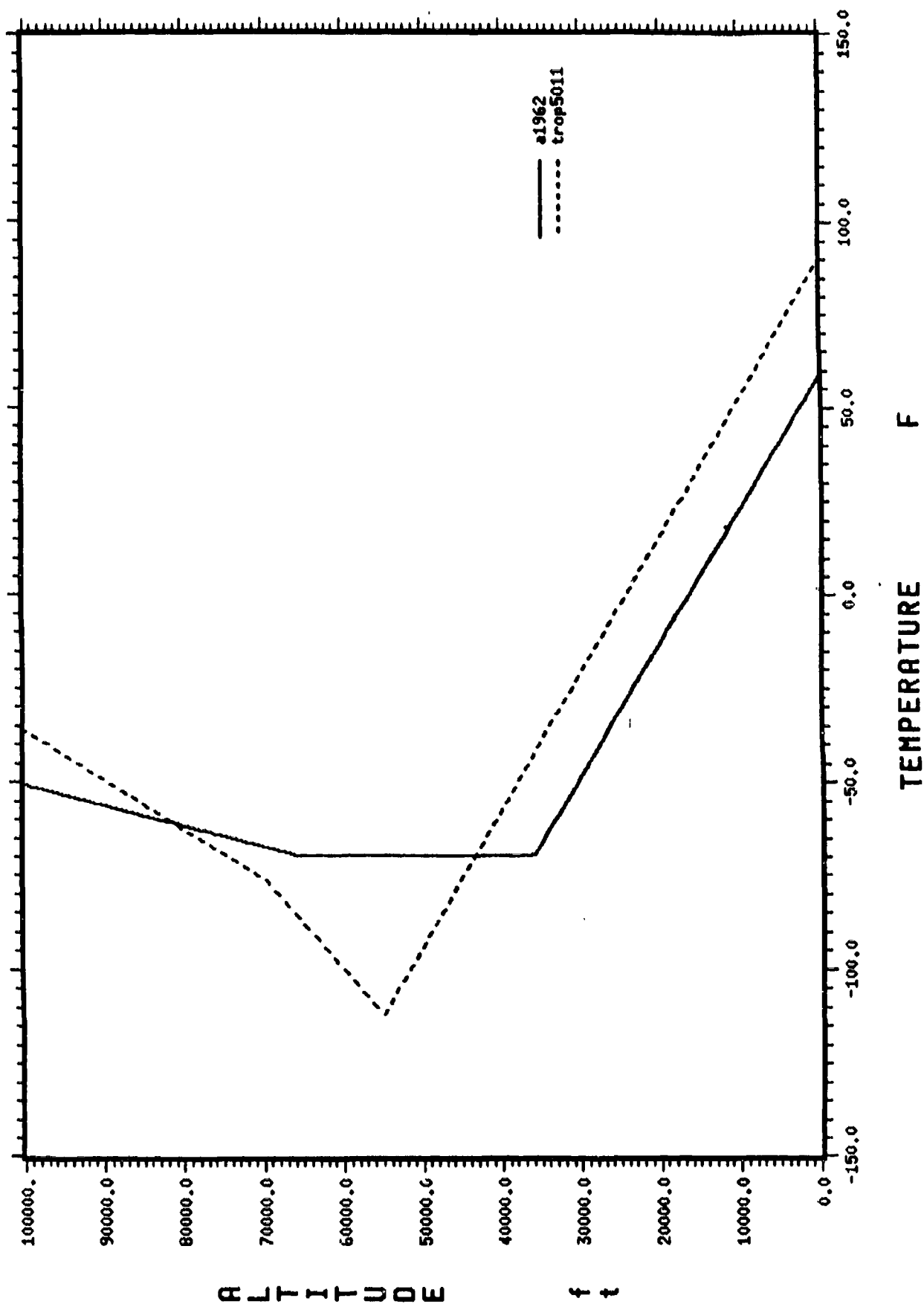
# TEMPERATURE COMPARISON 1966 Standard Atmosphere 75° N. Lat.



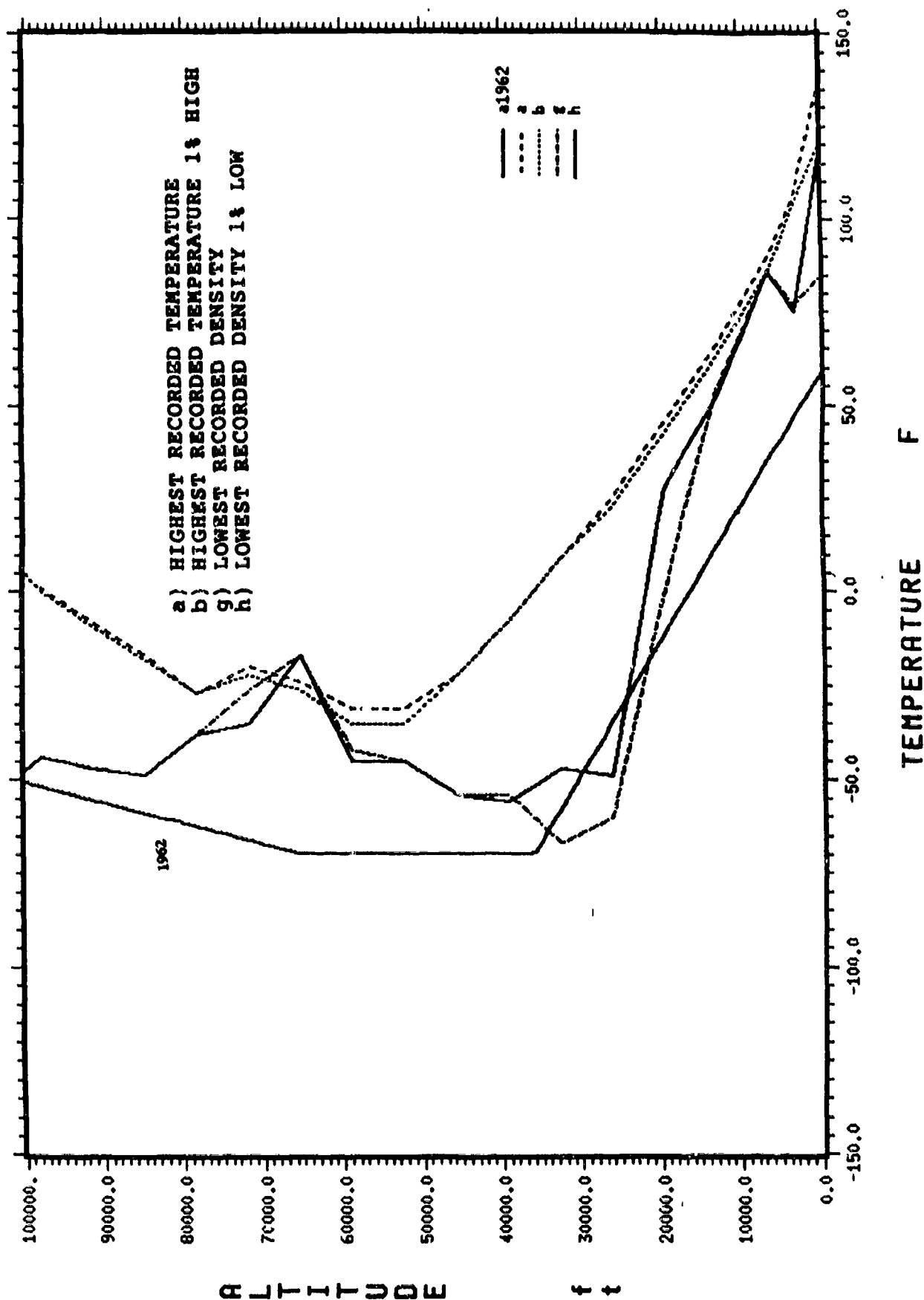
# TEMPERATURE COMPARISON 210A



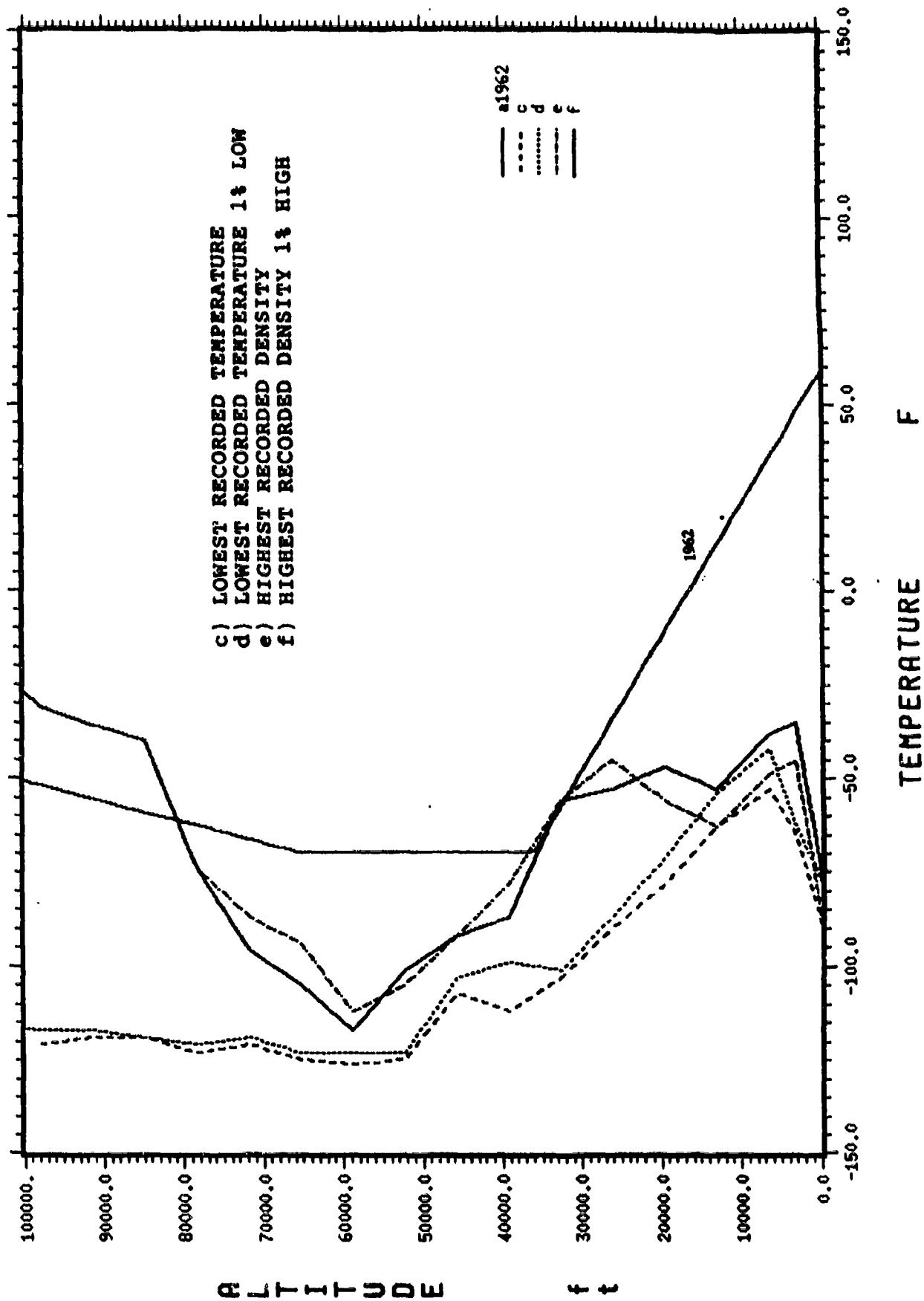
# TEMPERATURE COMPARISON 5811B



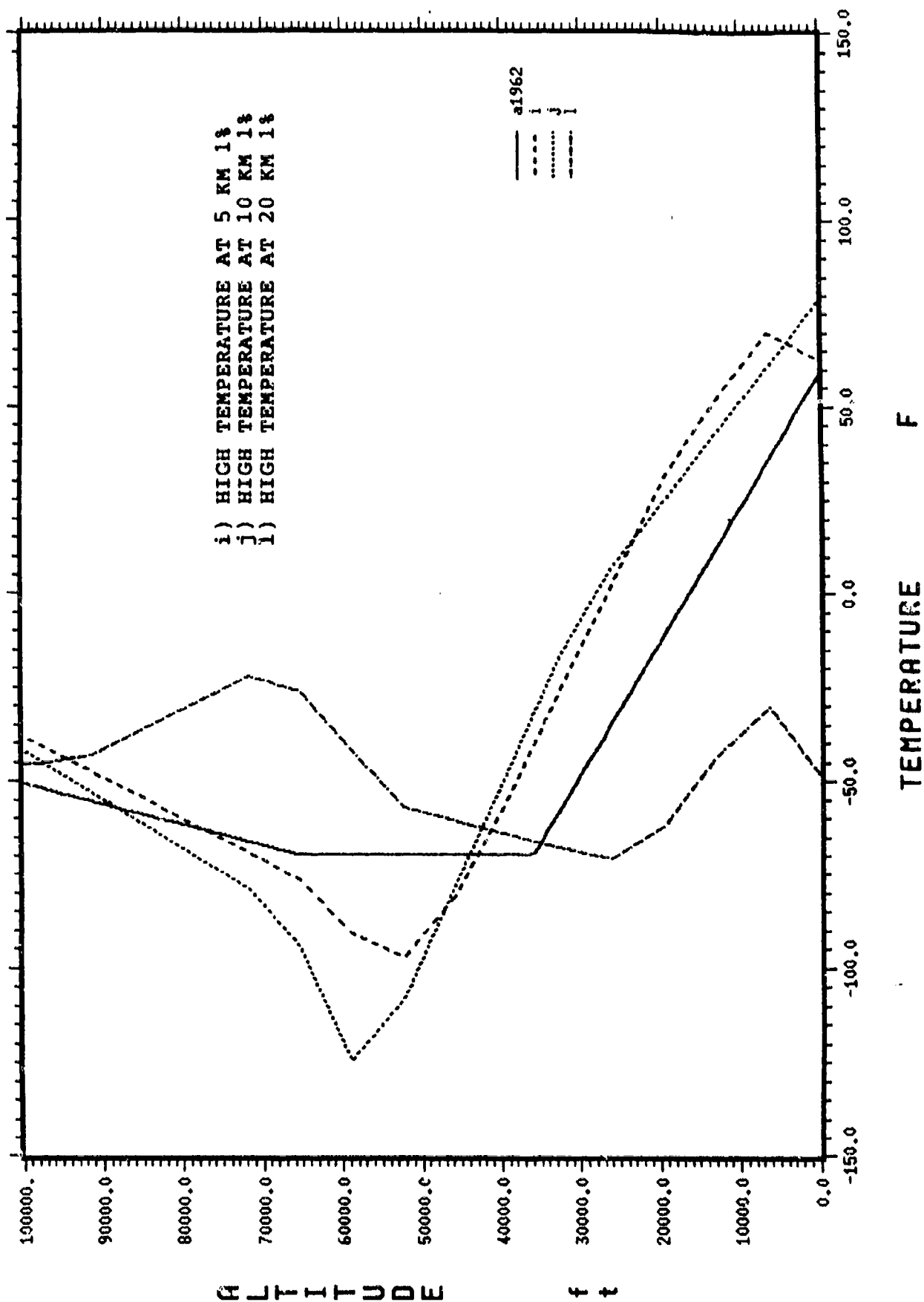
# TEMPERATURE COMPARISON 218C



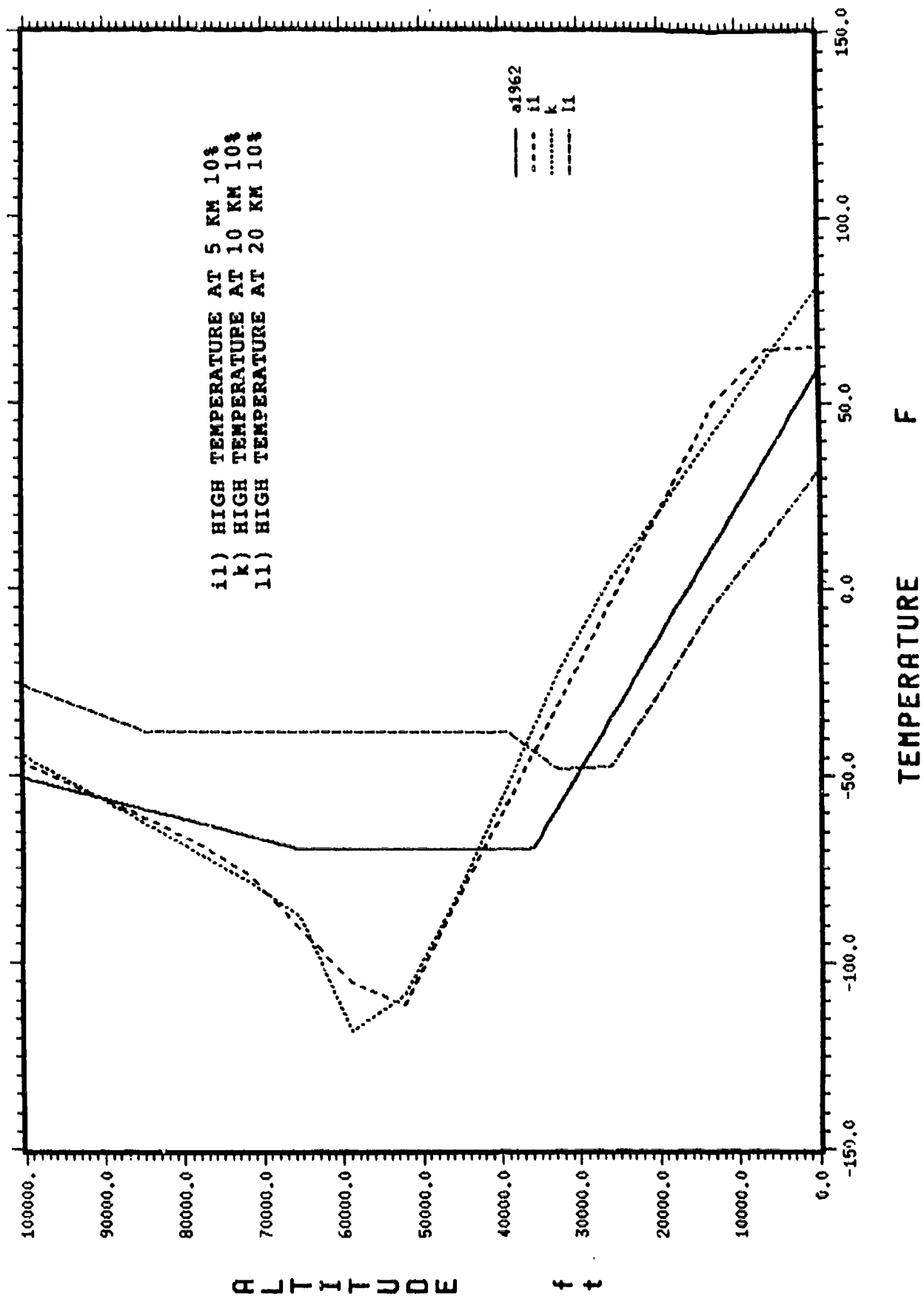
# TEMPERATURE COMPARISON 210C



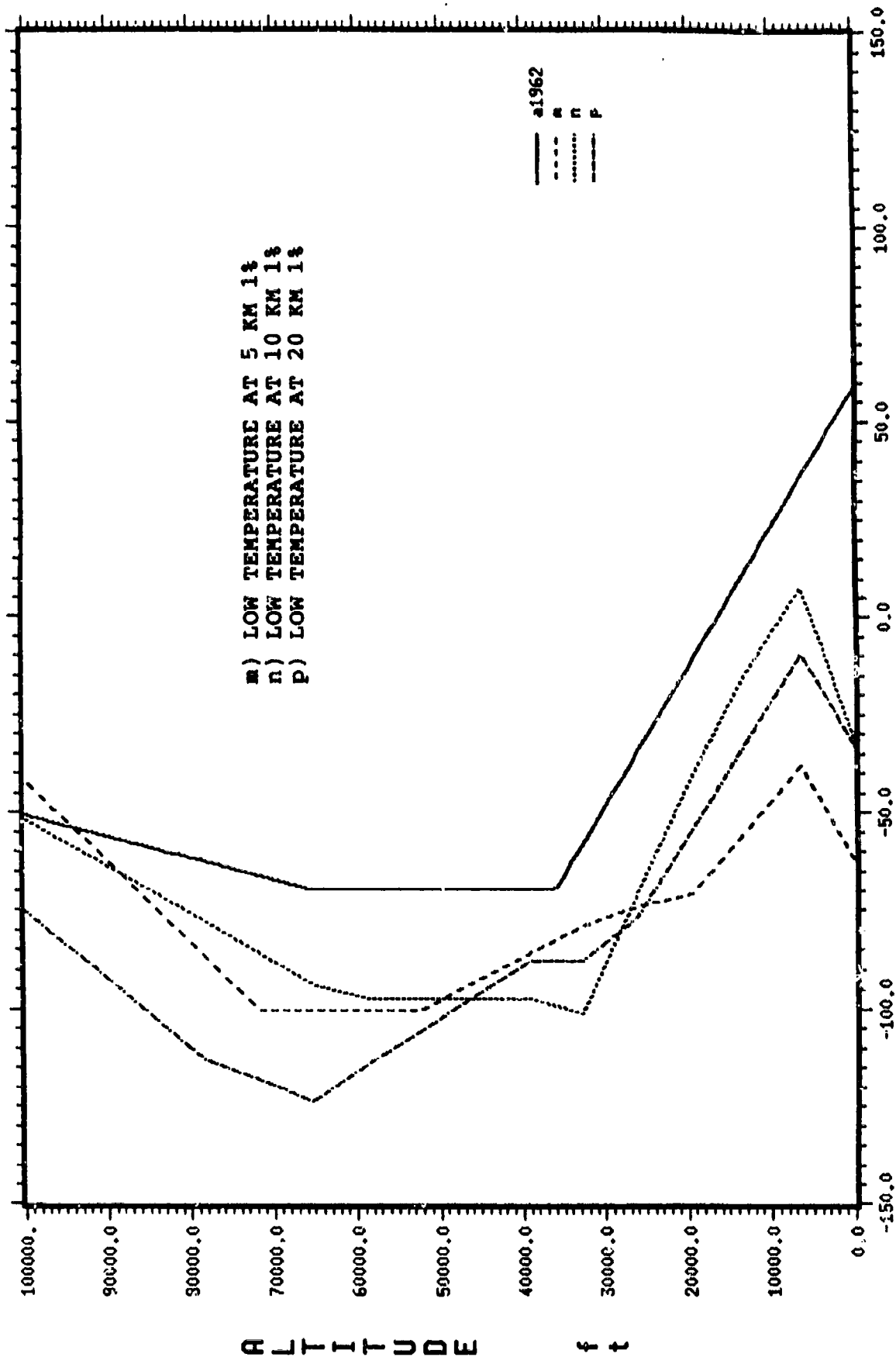
# TEMPERATURE COMPARISON 218C



# TEMPERATURE COMPARISON 210C

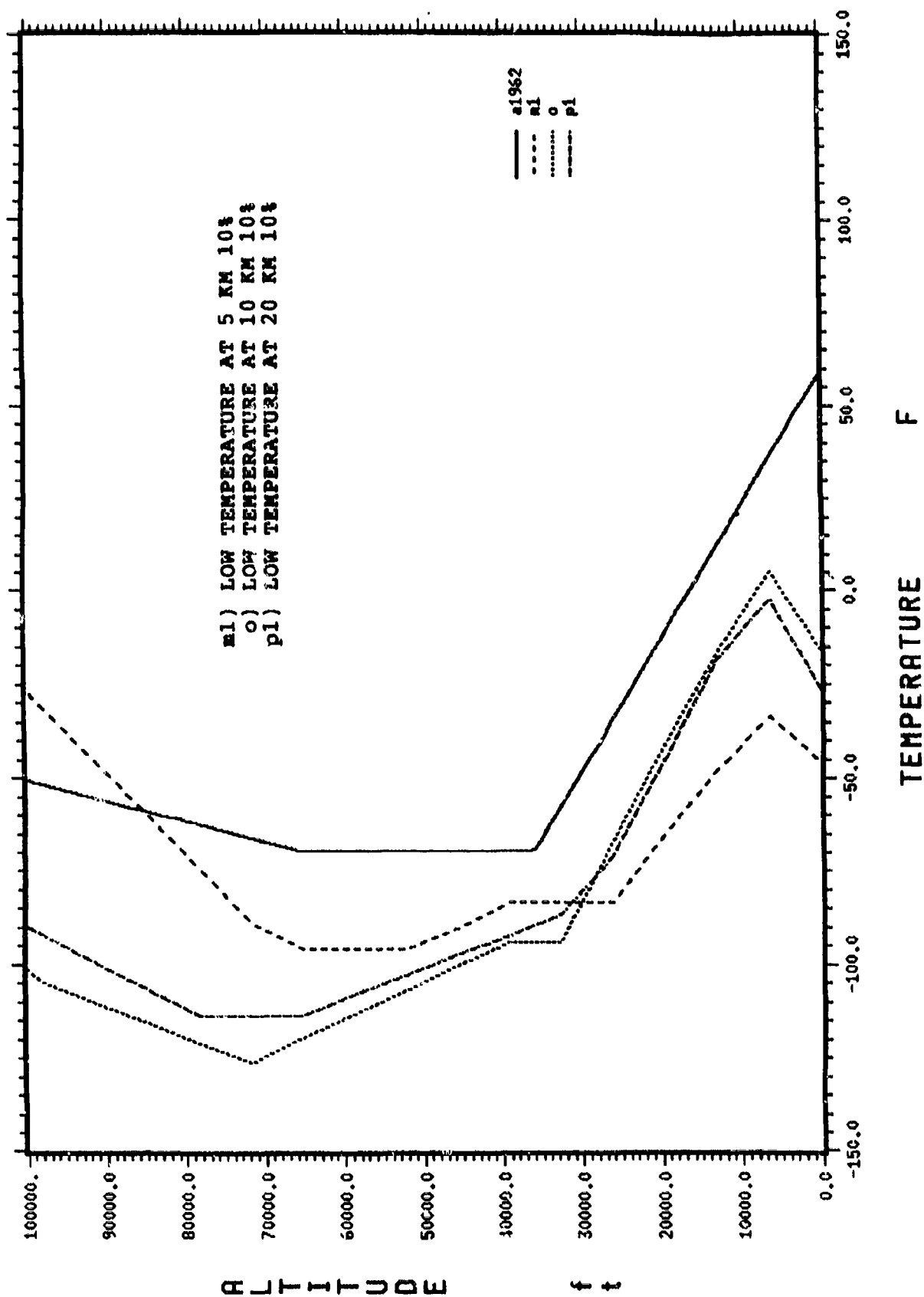


# TEMPERATURE COMPARISON 218C

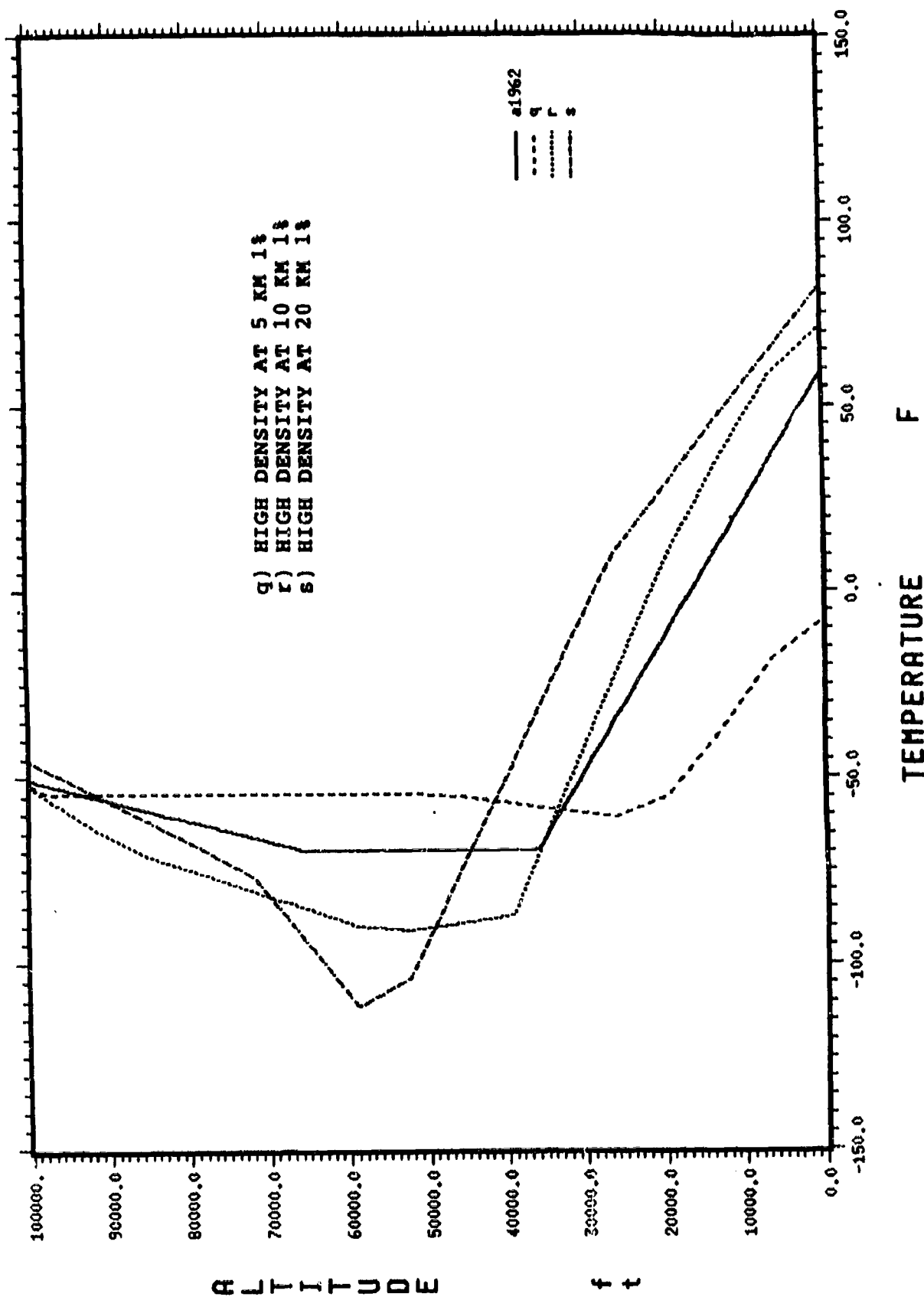


m) LOW TEMPERATURE AT 5 KM 1%  
 n) LOW TEMPERATURE AT 10 KM 1%  
 p) LOW TEMPERATURE AT 20 KM 1%

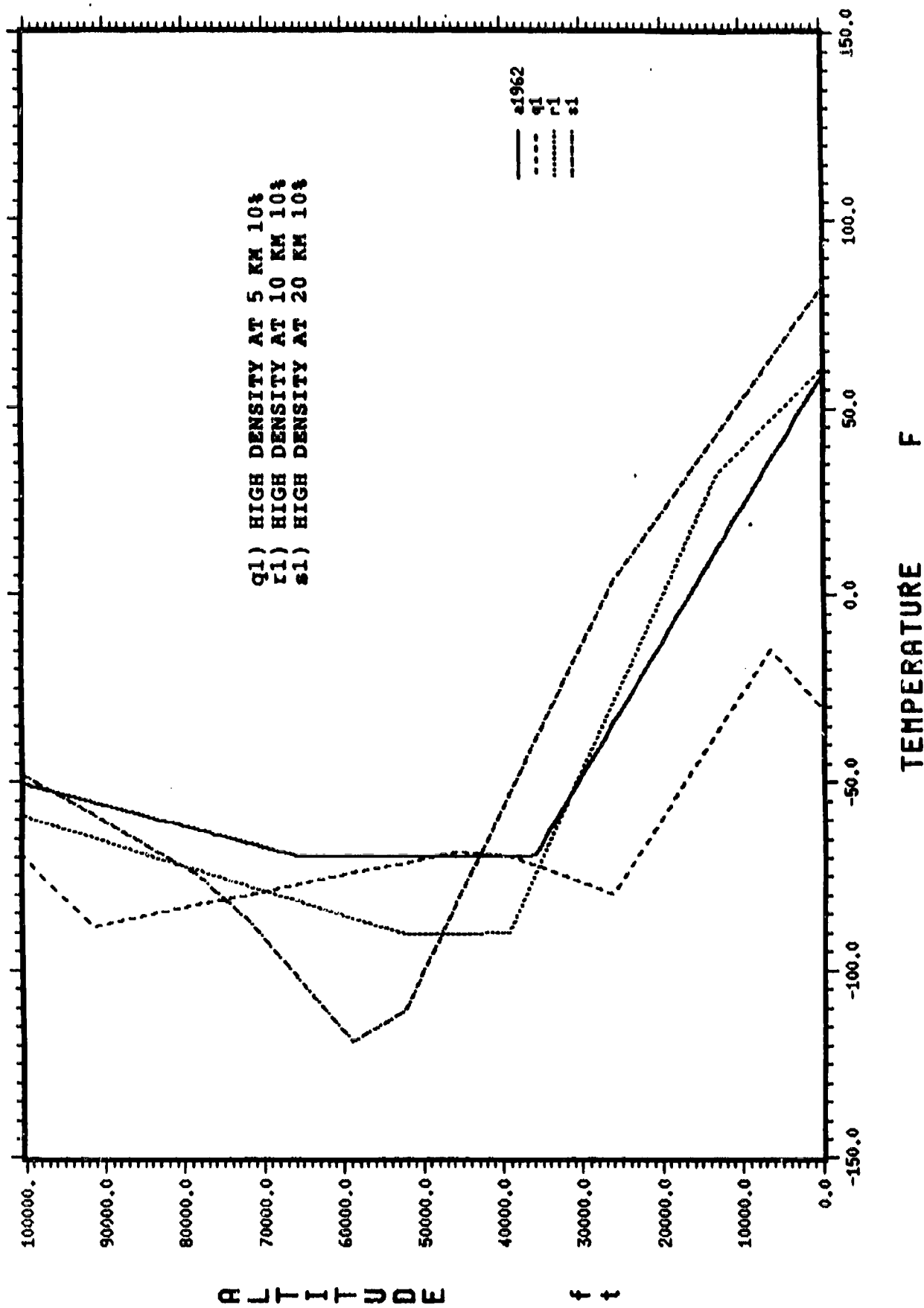
# TEMPERATURE COMPARISON 218C



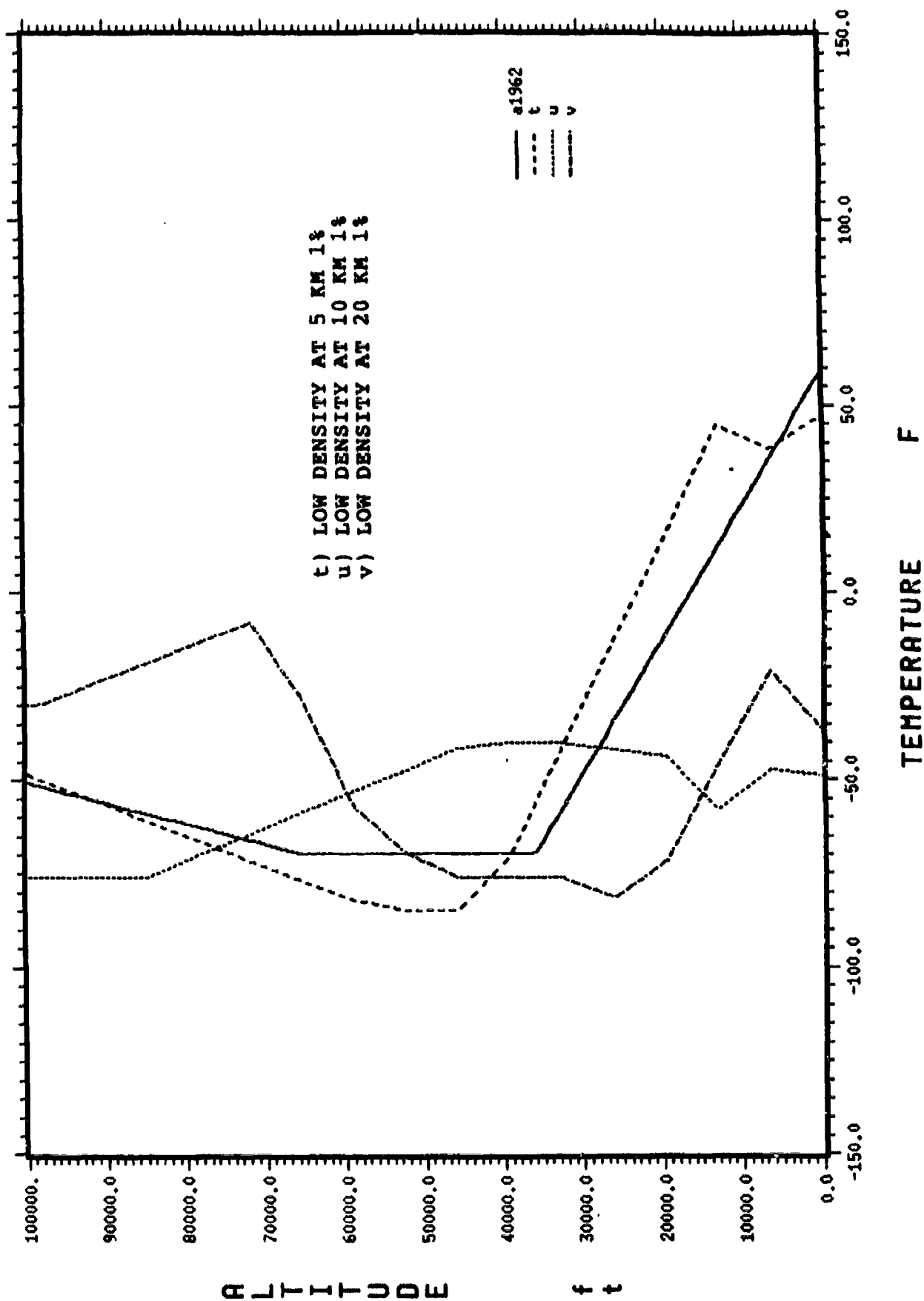
# TEMPERATURE COMPARISON 218C



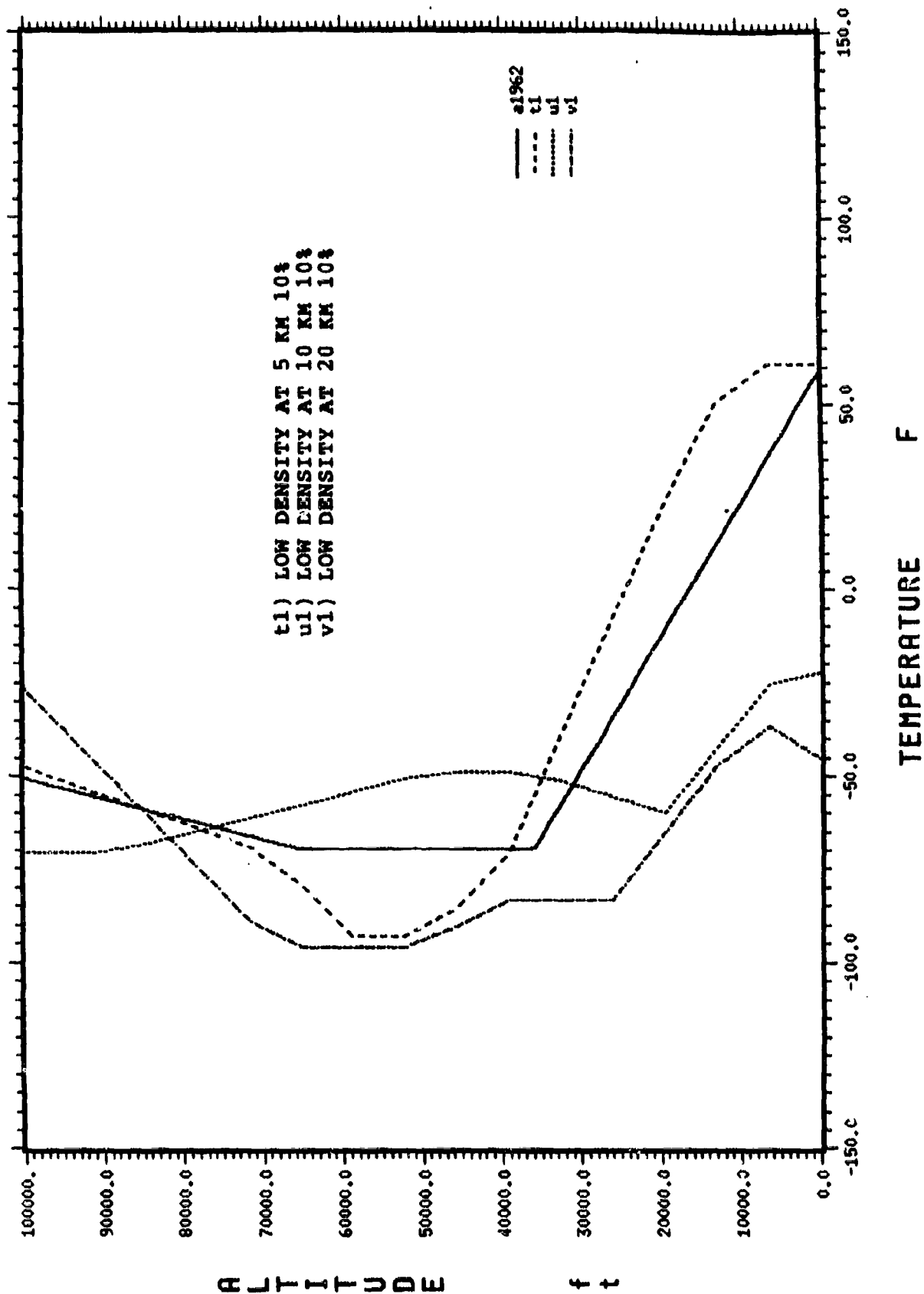
# TEMPERATURE COMPARISON 210C



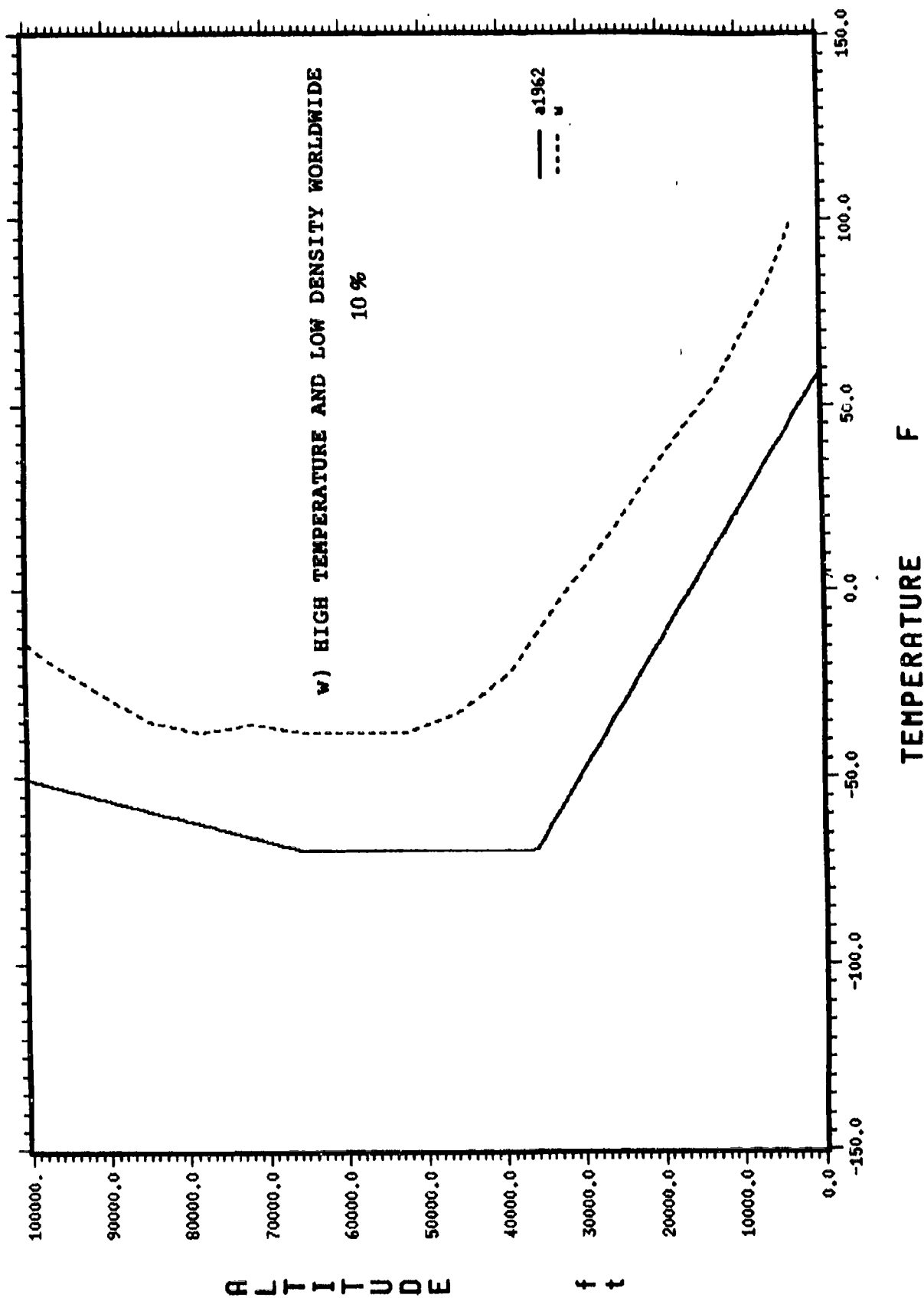
# TEMPERATURE COMPARISON 210C



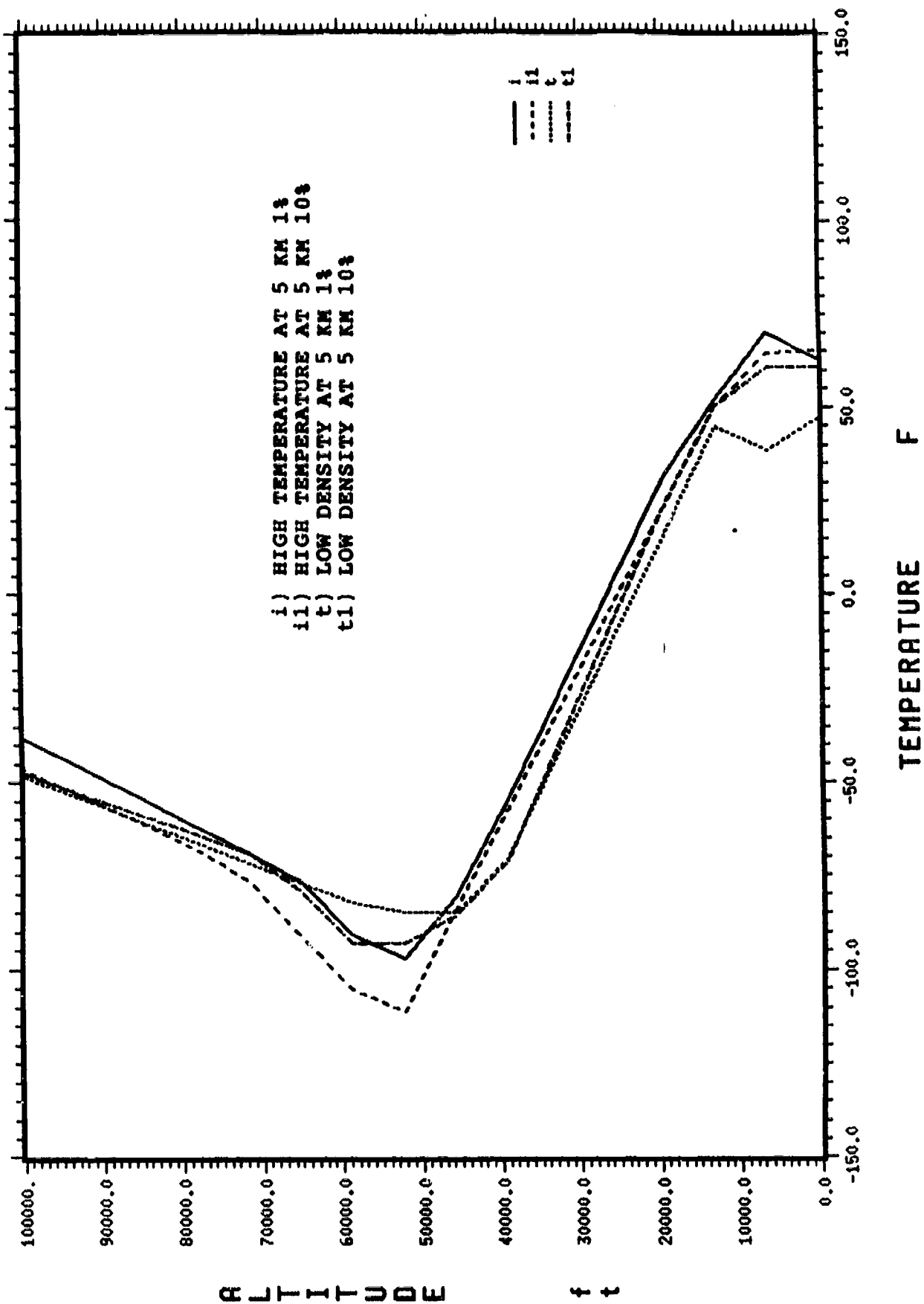
# TEMPERATURE COMPARISON 218C



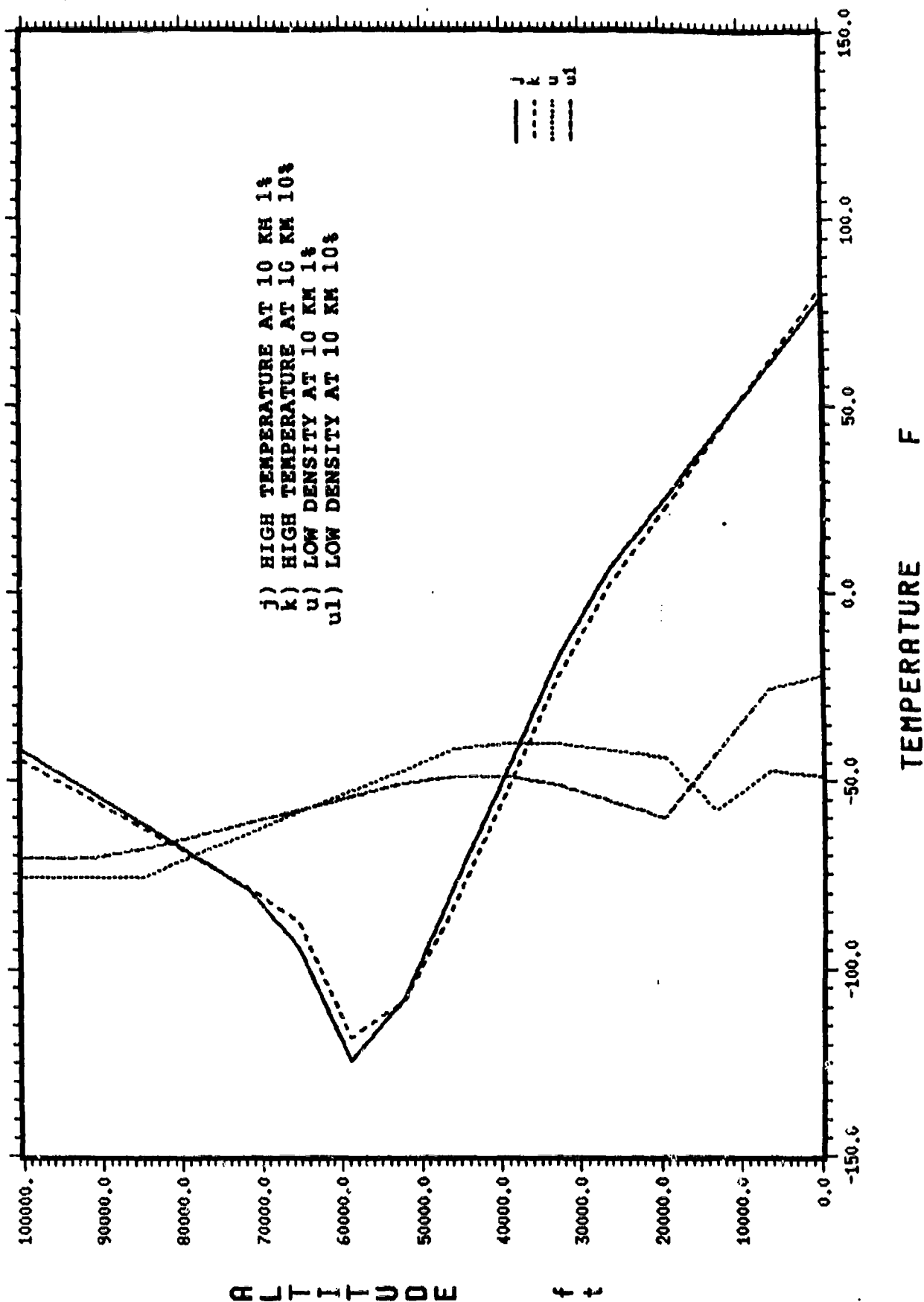
# TEMPERATURE COMPARISON 210C



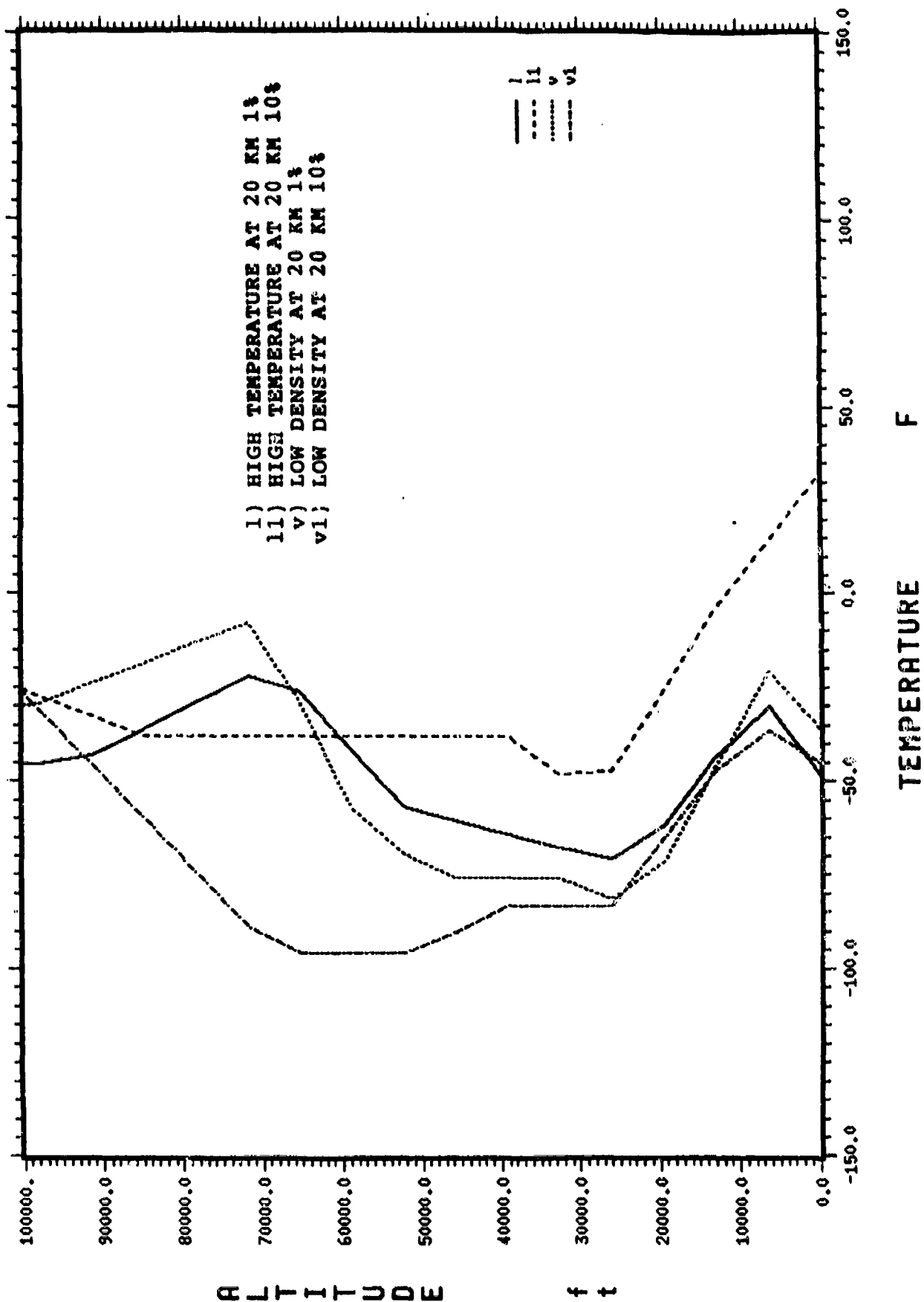
# TEMPERATURE COMPARISON 210C



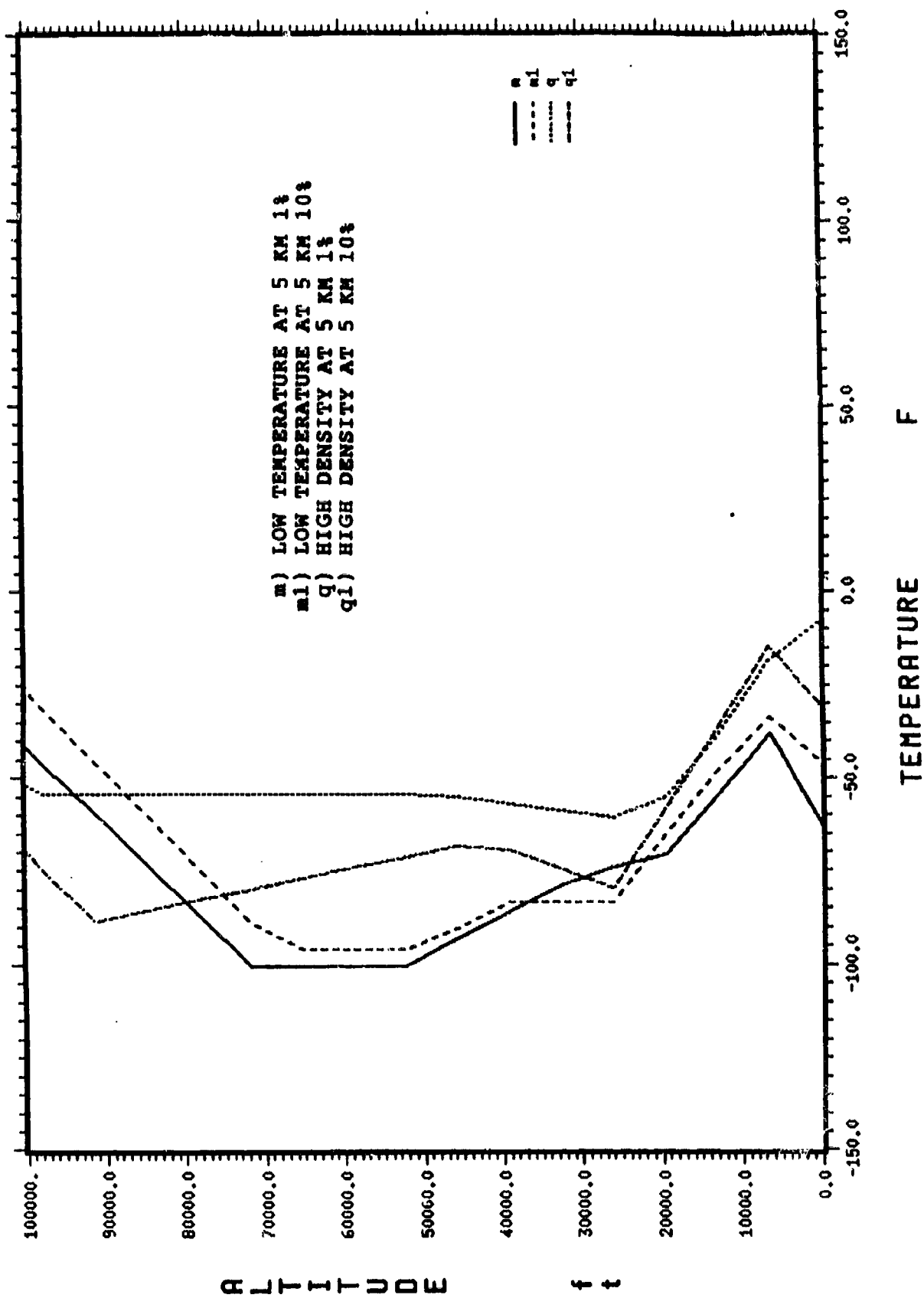
# TEMPERATURE COMPARISON 210C



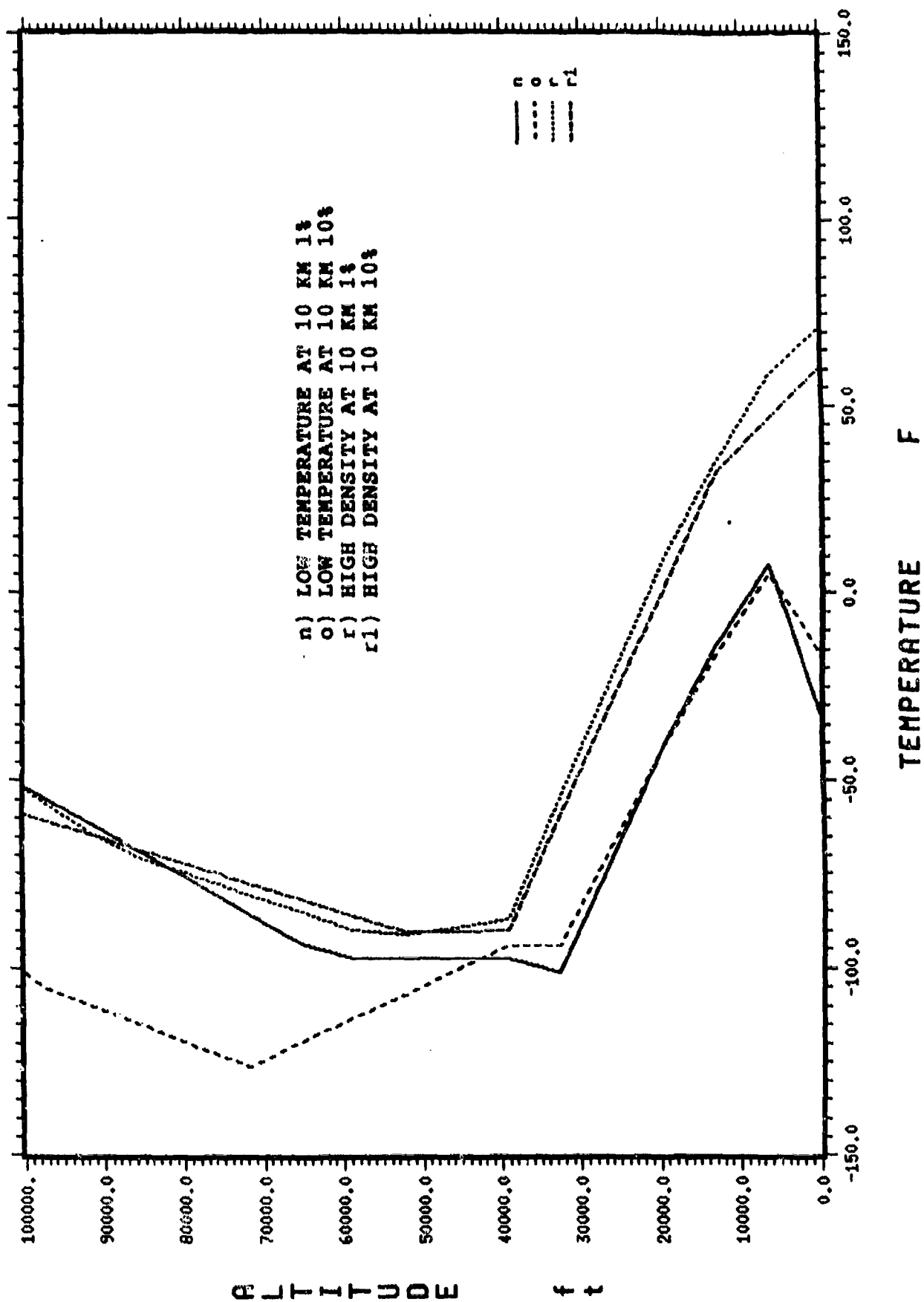
# TEMPERATURE COMPARISON 218C



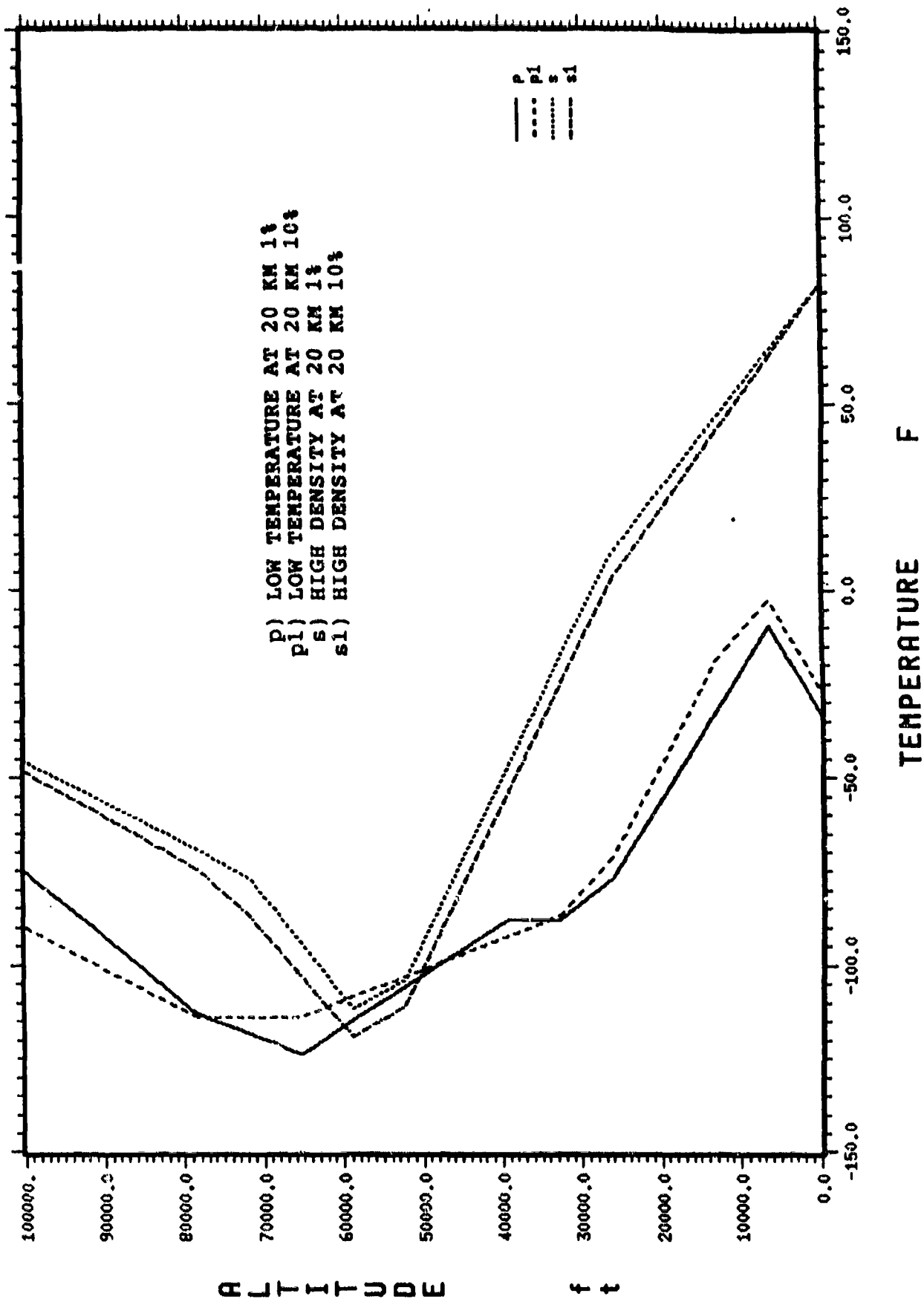
# TEMPERATURE COMPARISON 218C



# TEMPERATURE COMPARISON 218C

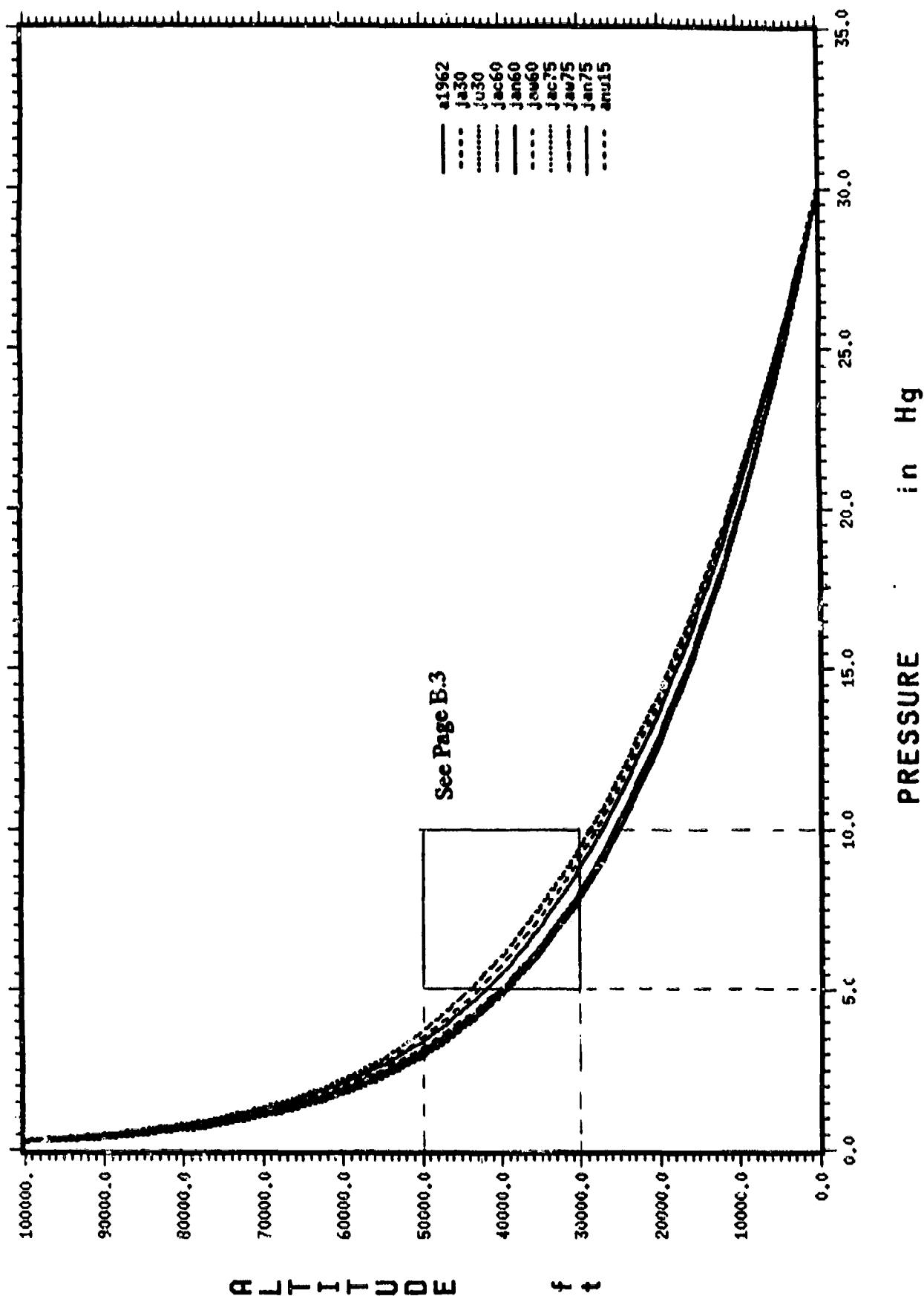


# TEMPERATURE COMPARISON 210C

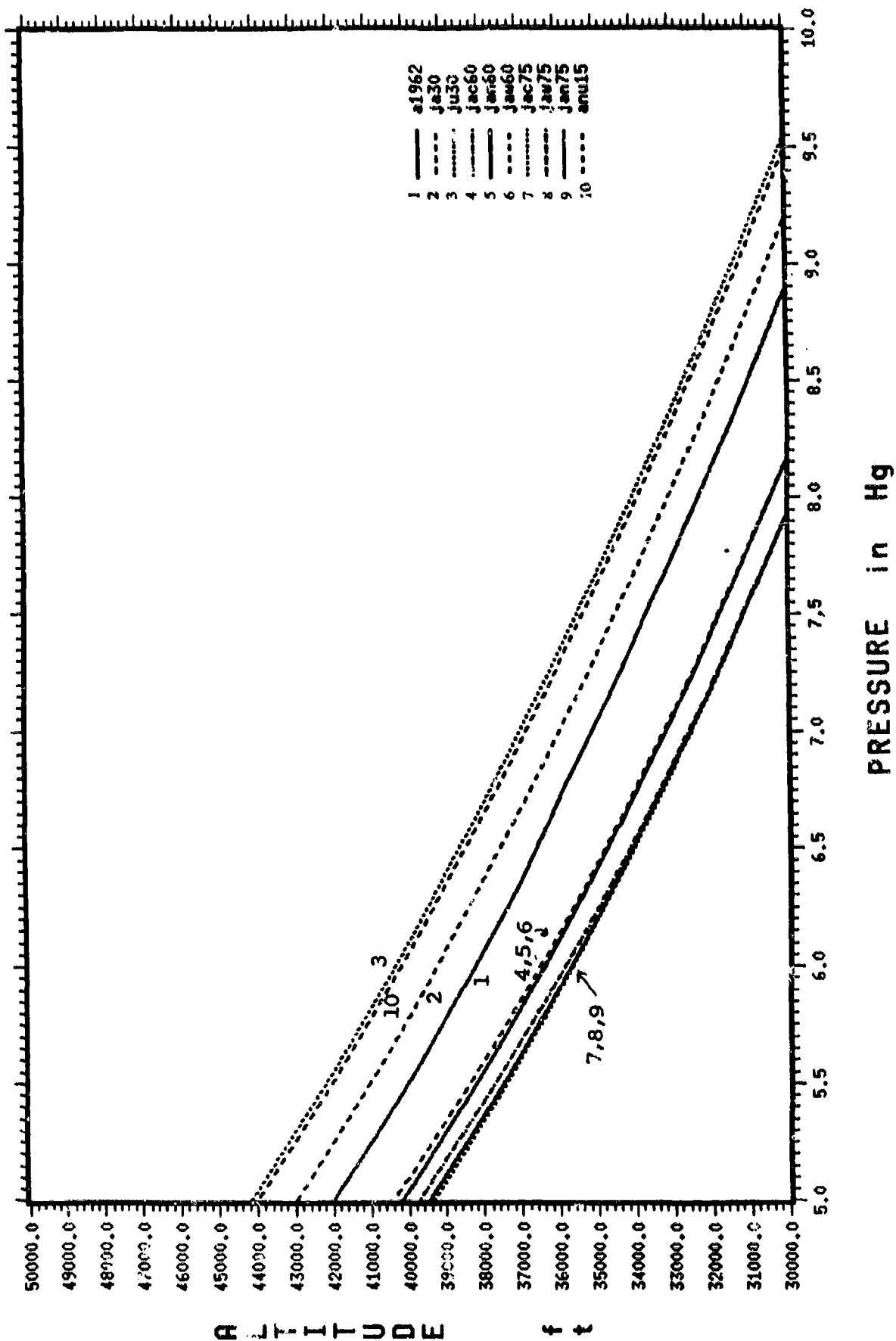


**APPENDIX B.**  
**PRESSURE PROFILES**

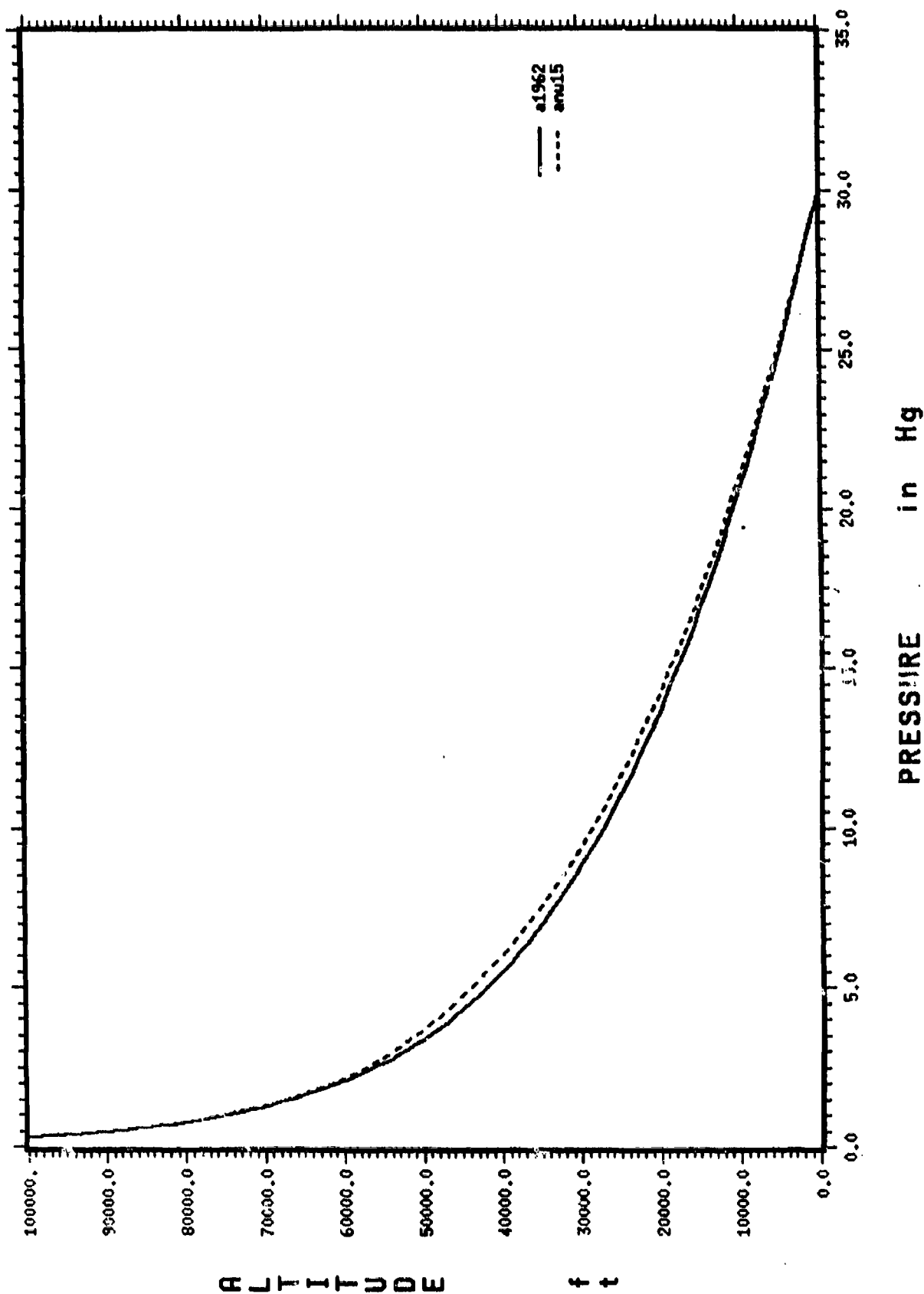
# PRESSURE COMPARISON 1966 Standard Atmosphere 15°-75° N. Lat.



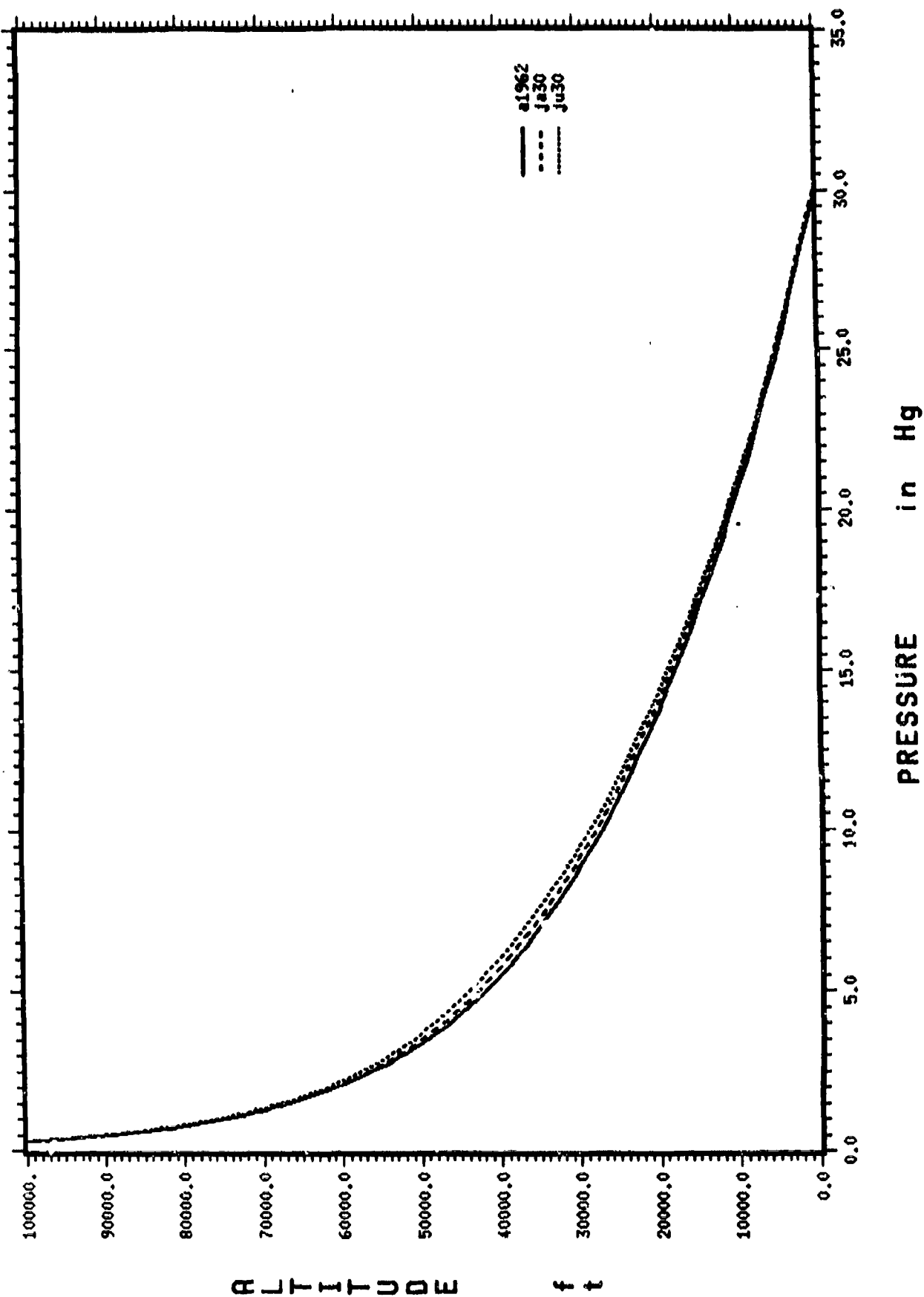
# PRESSURE COMPARISON



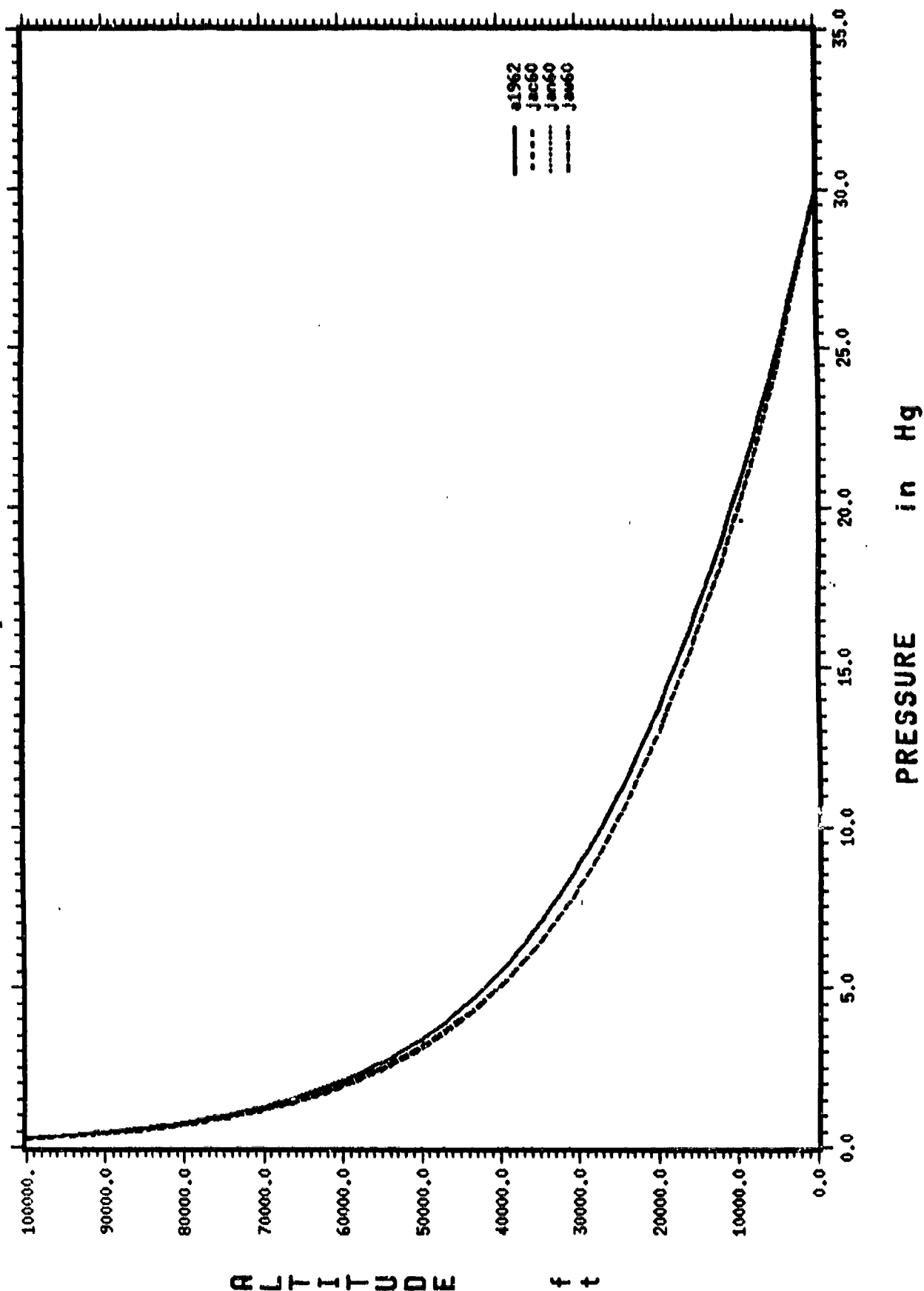
# PRESSURE COMPARISON 1966 Standard Atmosphere 15° N. Lat.



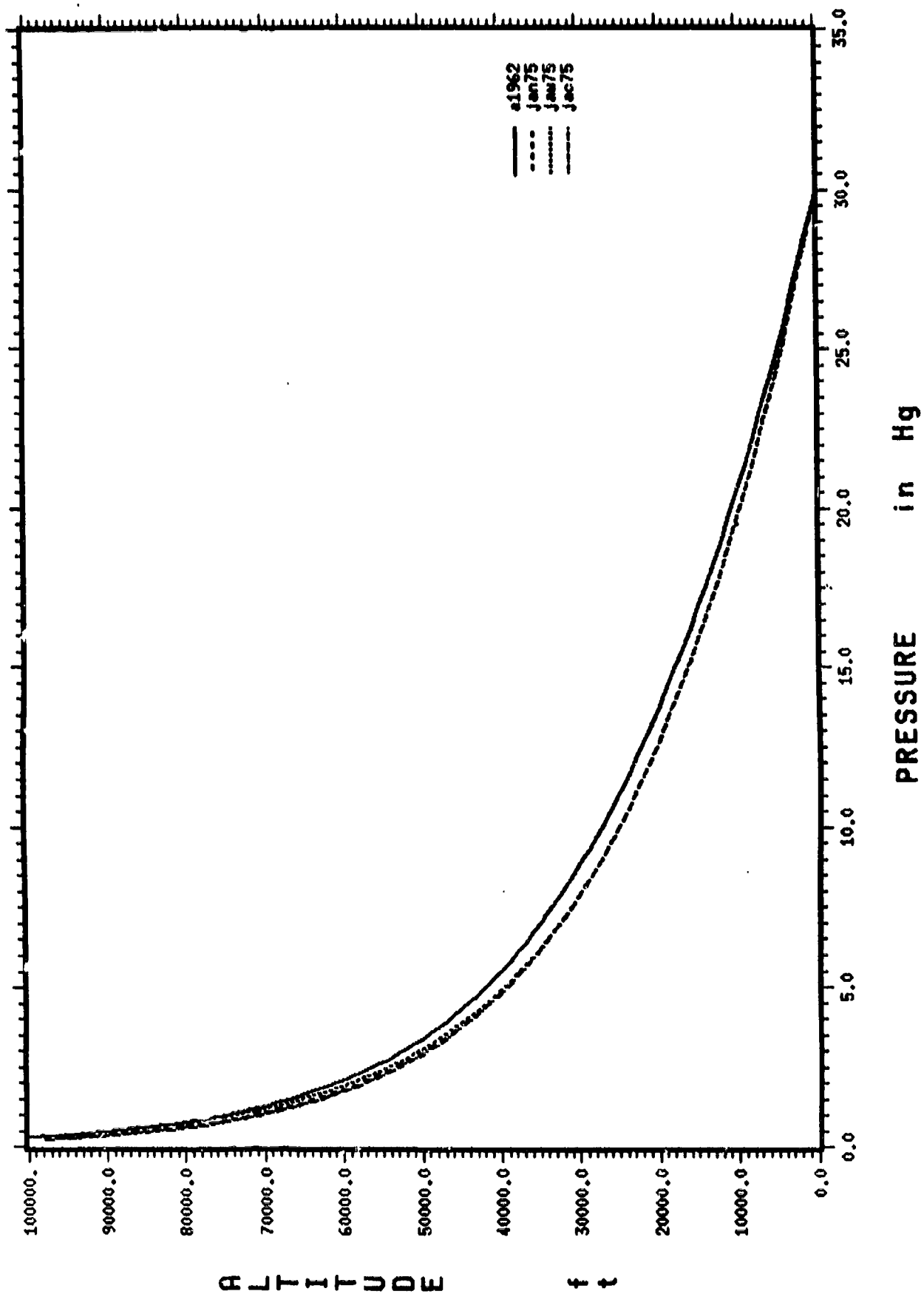
# PRESSURE COMPARISON 1966 Standard Atmosphere 30° N. Lat.



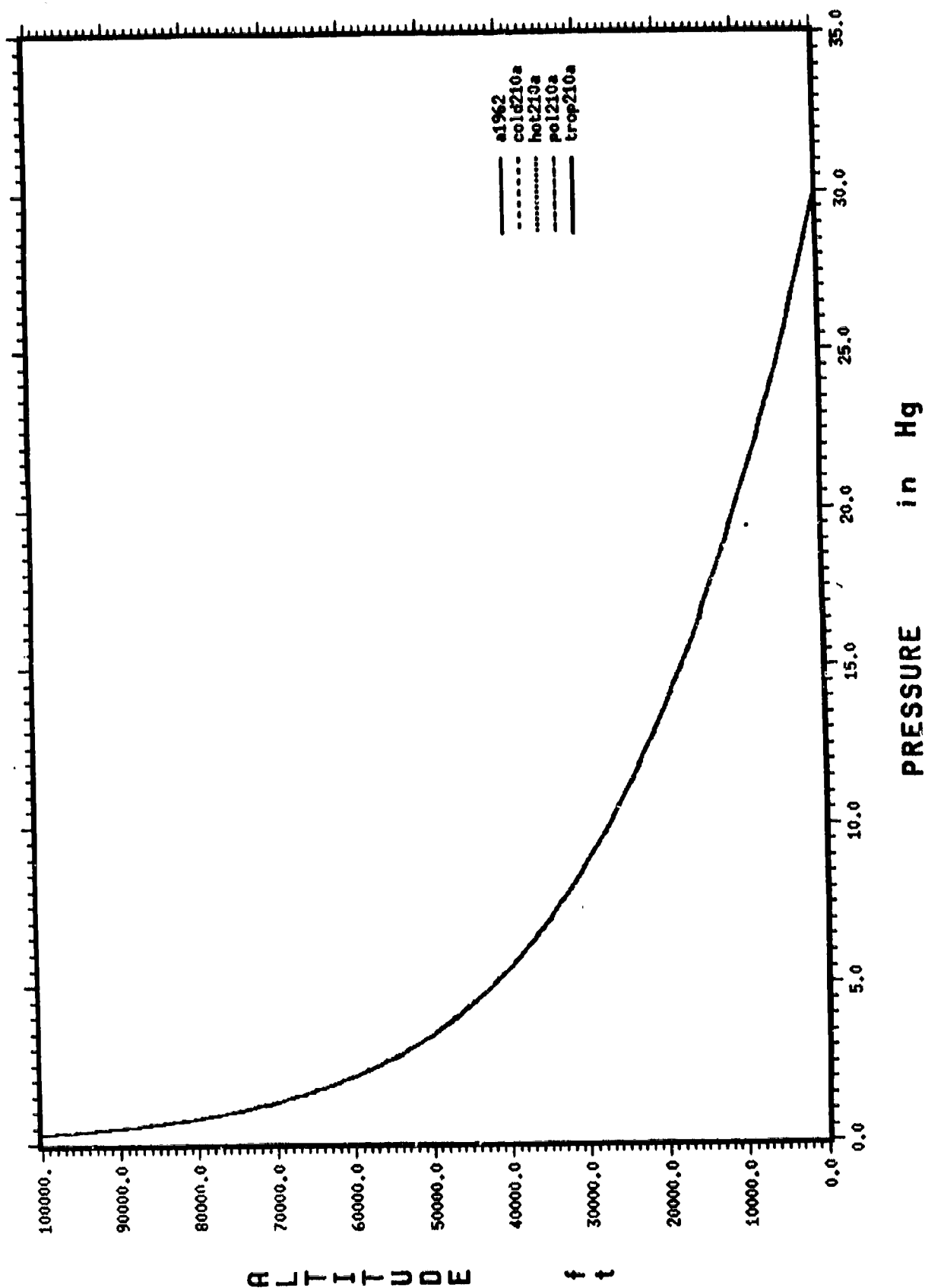
# PRESSURE COMPARISON 1966 Standard Atmosphere 60° N. Lat.



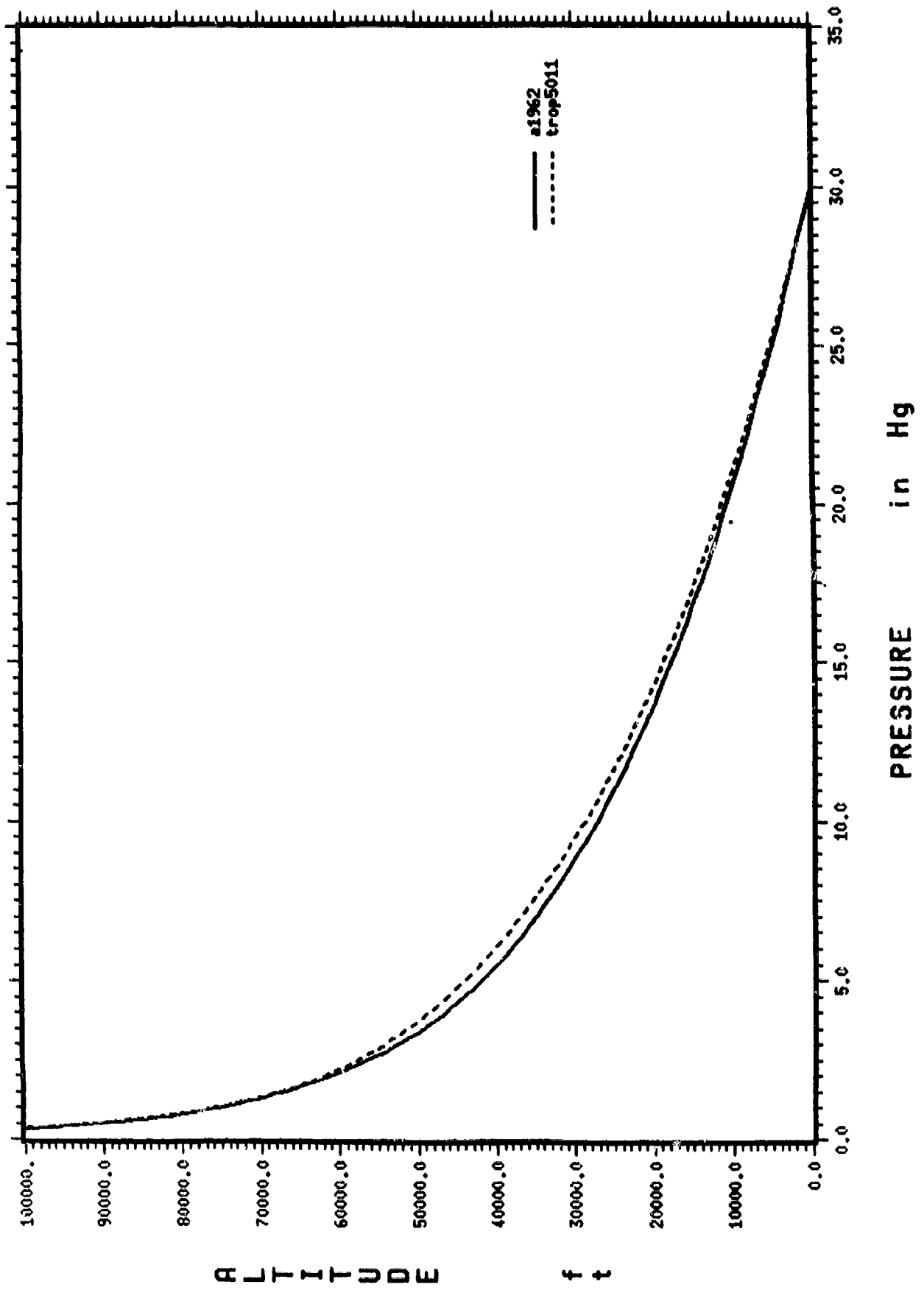
# PRESSURE COMPARISON 1966 Standard Atmosphere 75° N. Lat.



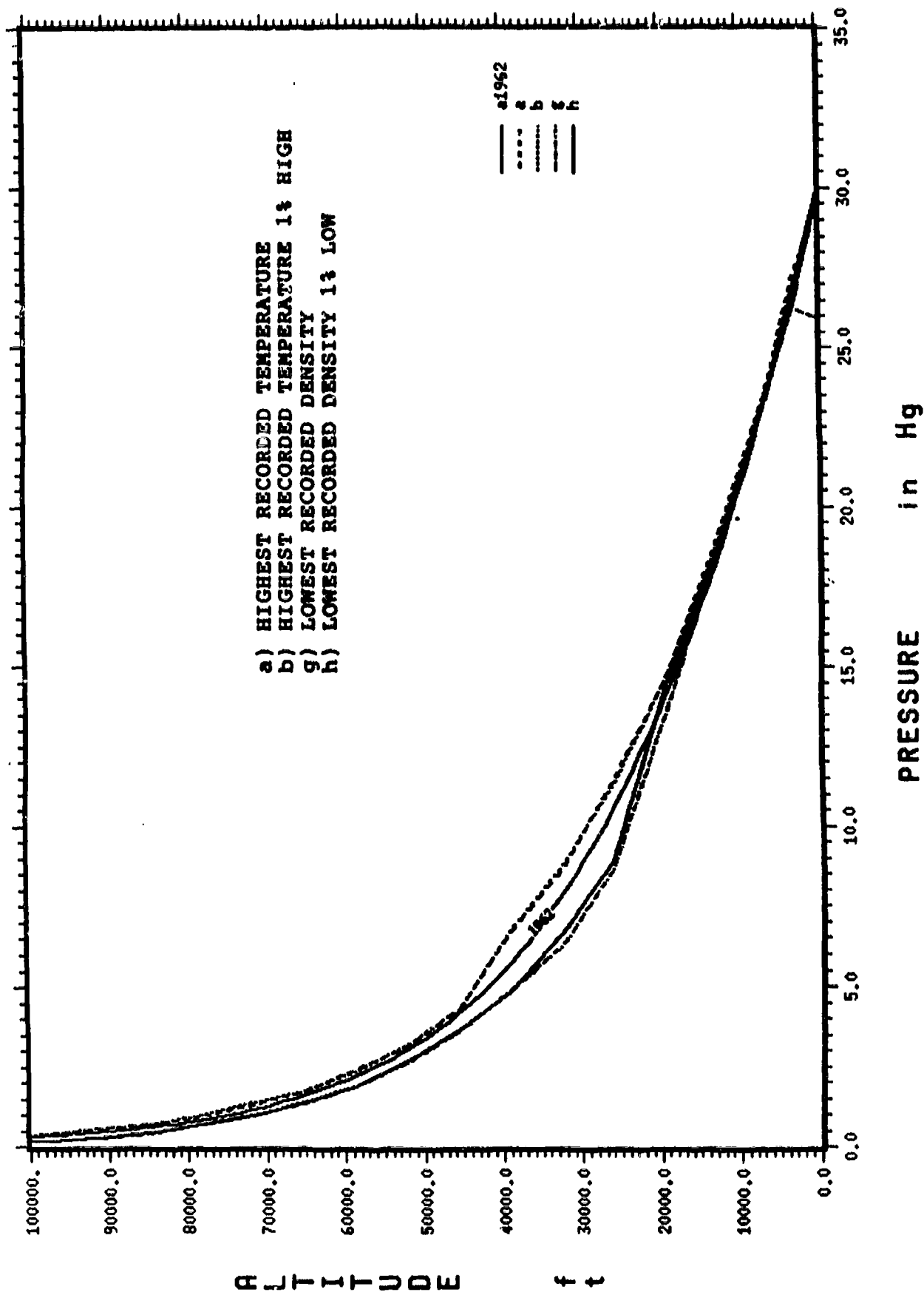
# PRESSURE COMPARISON 218A



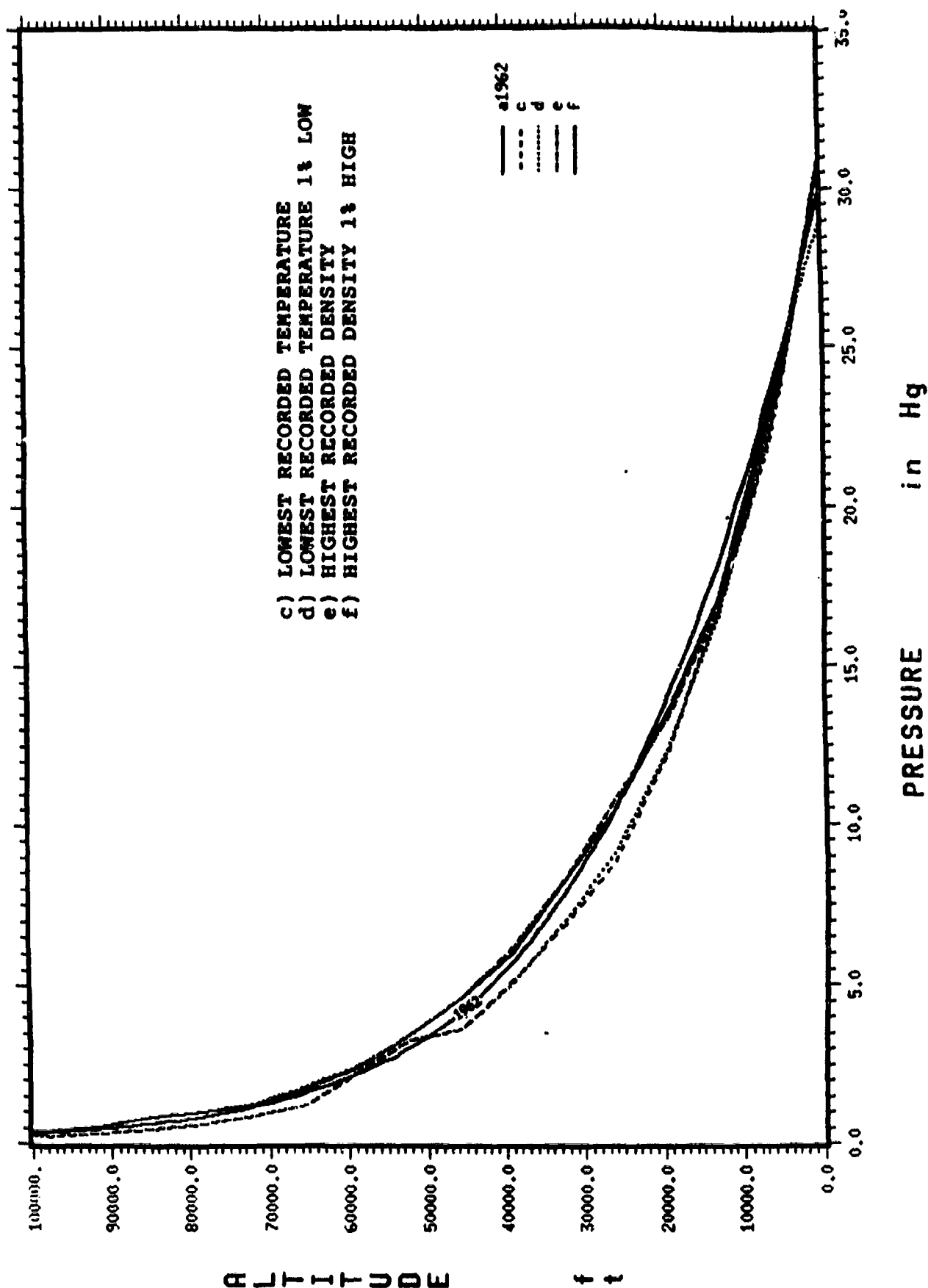
PRESSURE COMPARISON 5011B



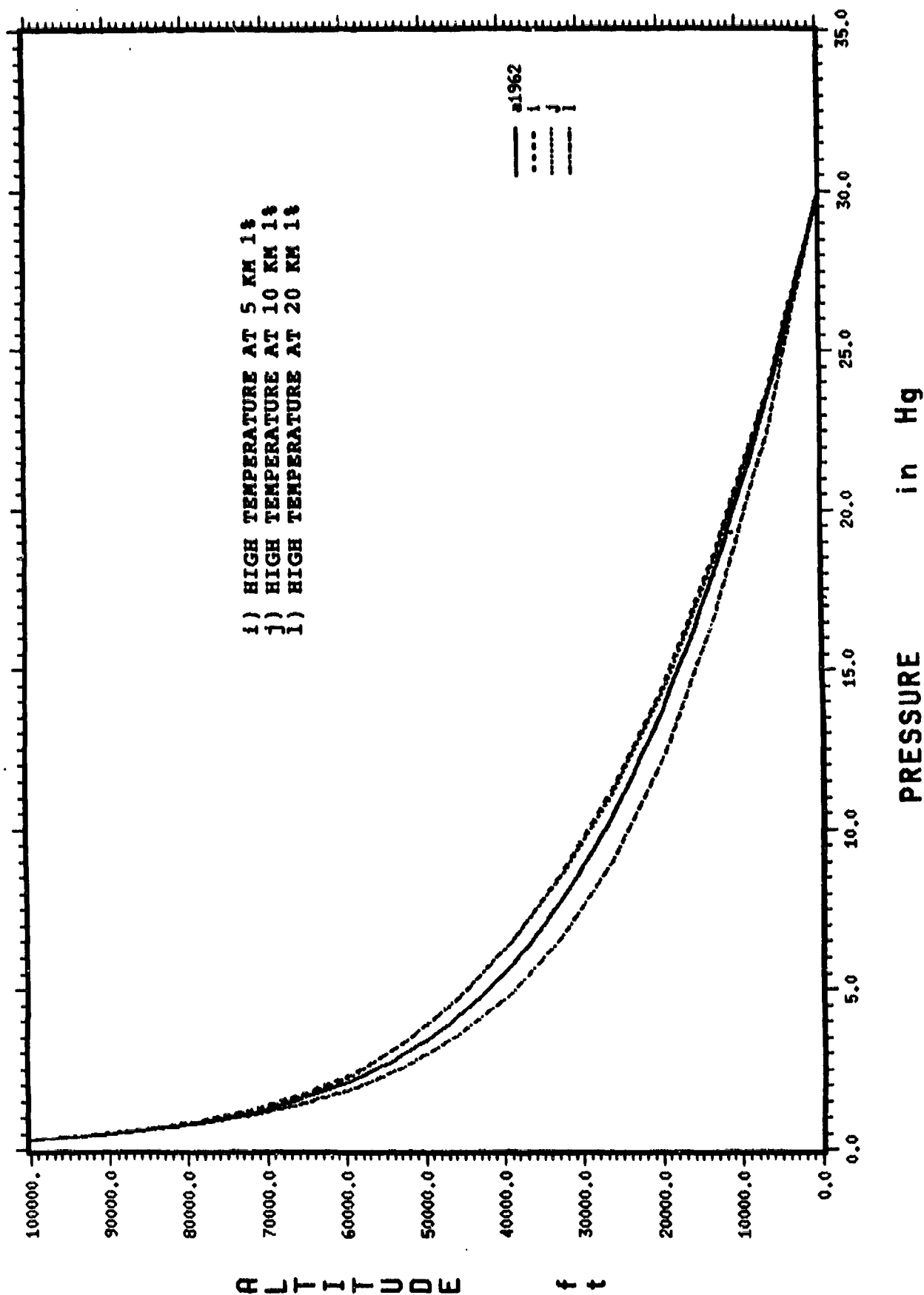
# PRESSURE COMPARISON 210C



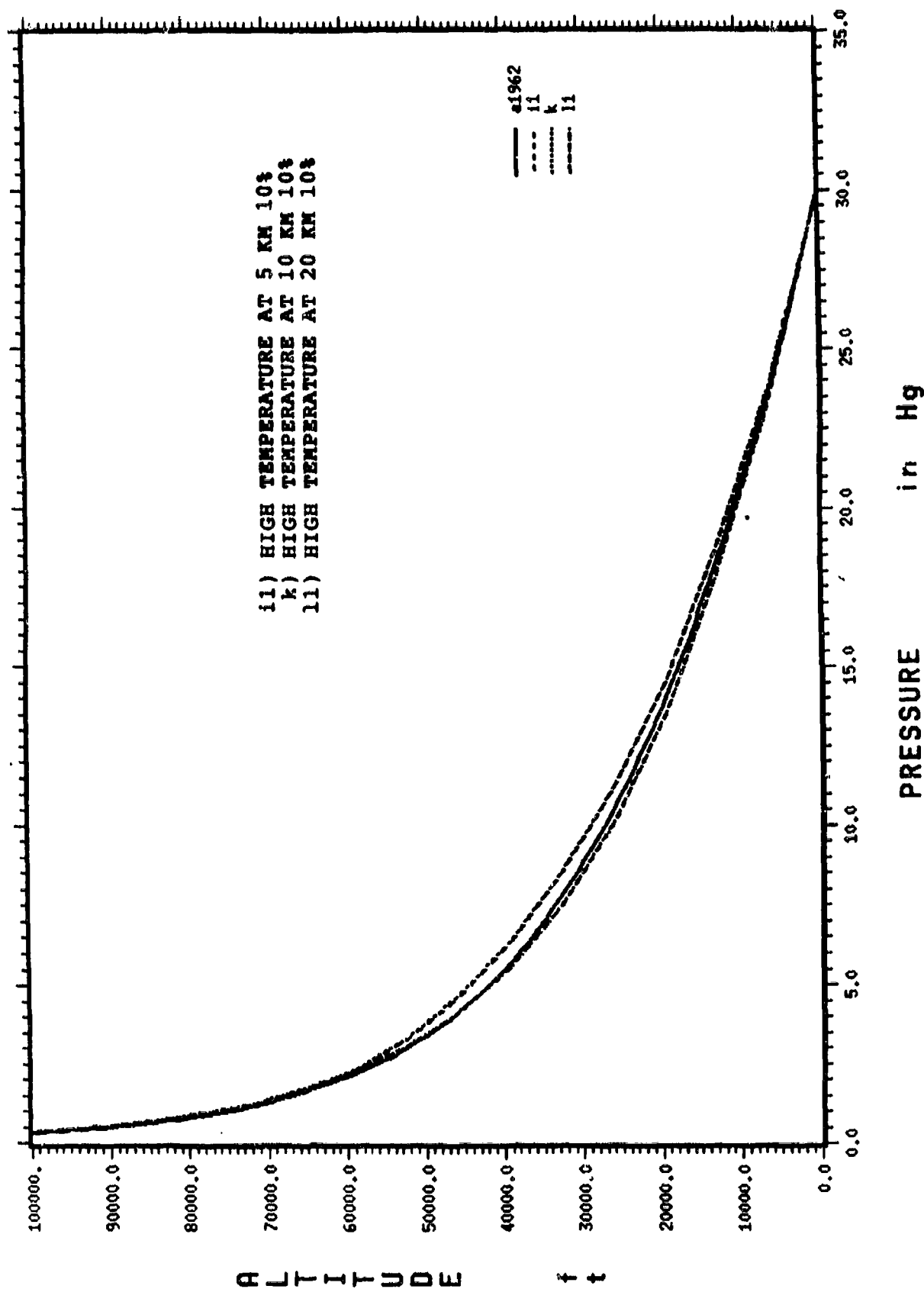
# PRESSURE COMPARISON 210C



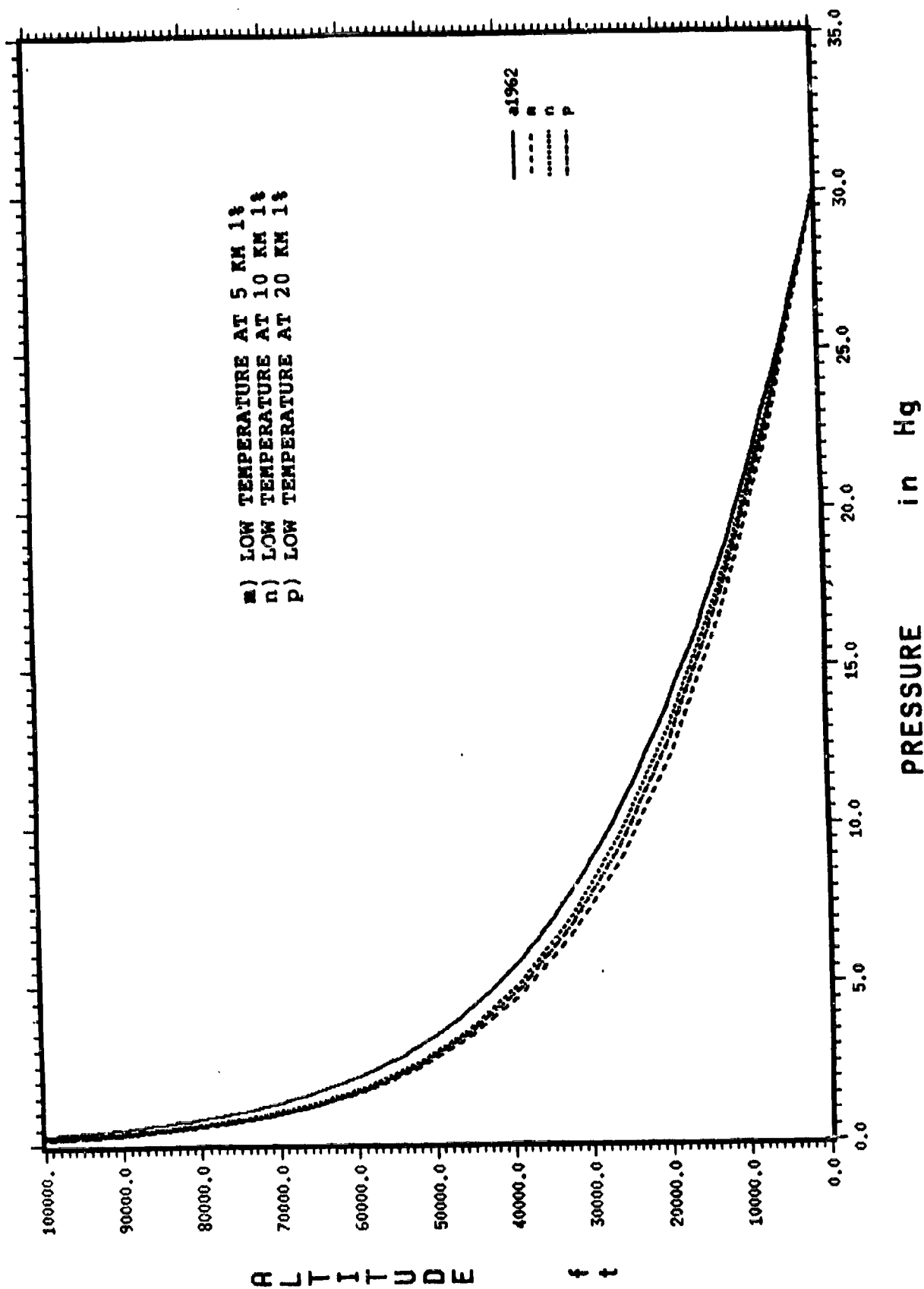
# PRESSURE COMPARISON 210C



# PRESSURE COMPARISON 218C

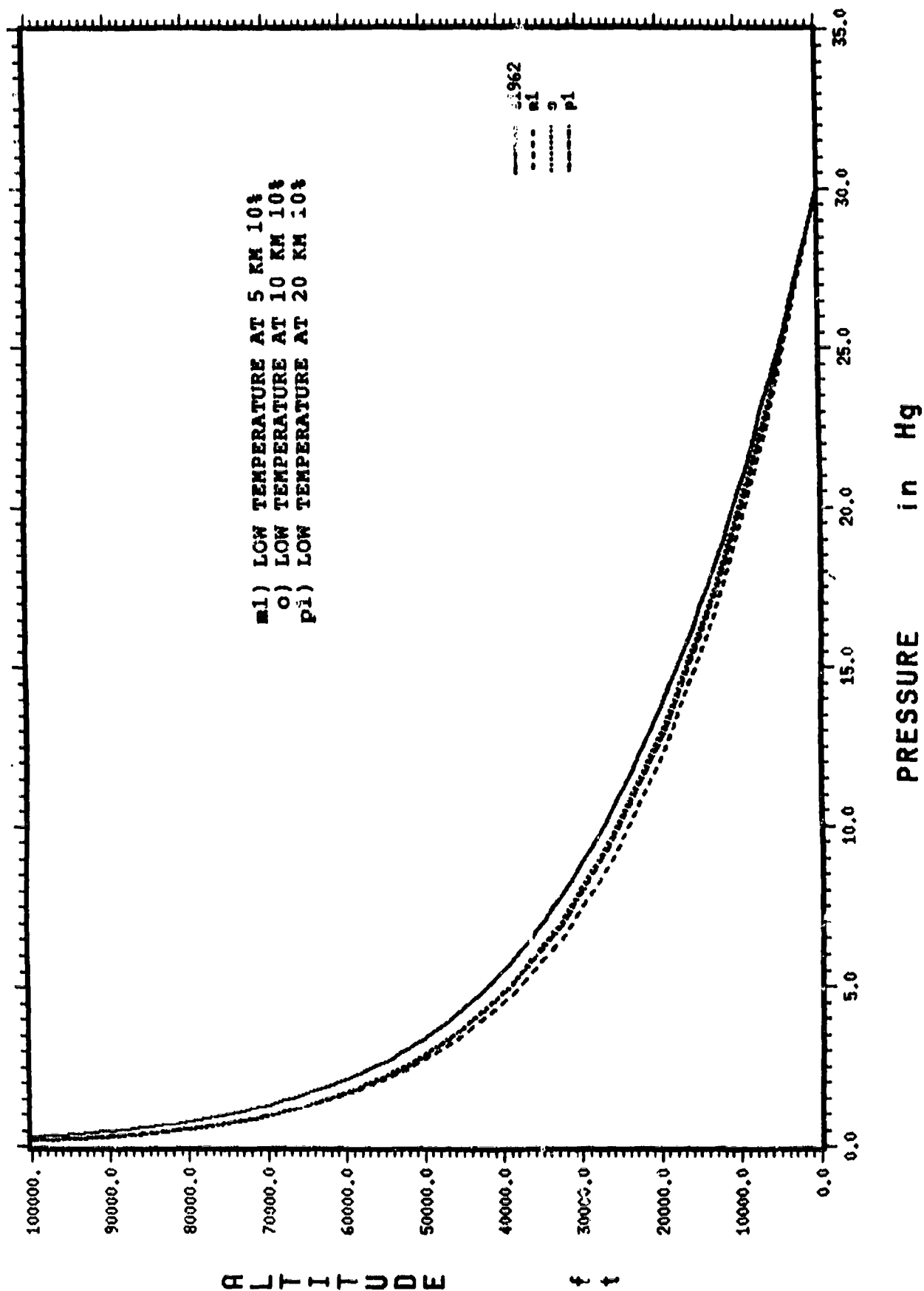


# PRESSURE COMPARISON 218C

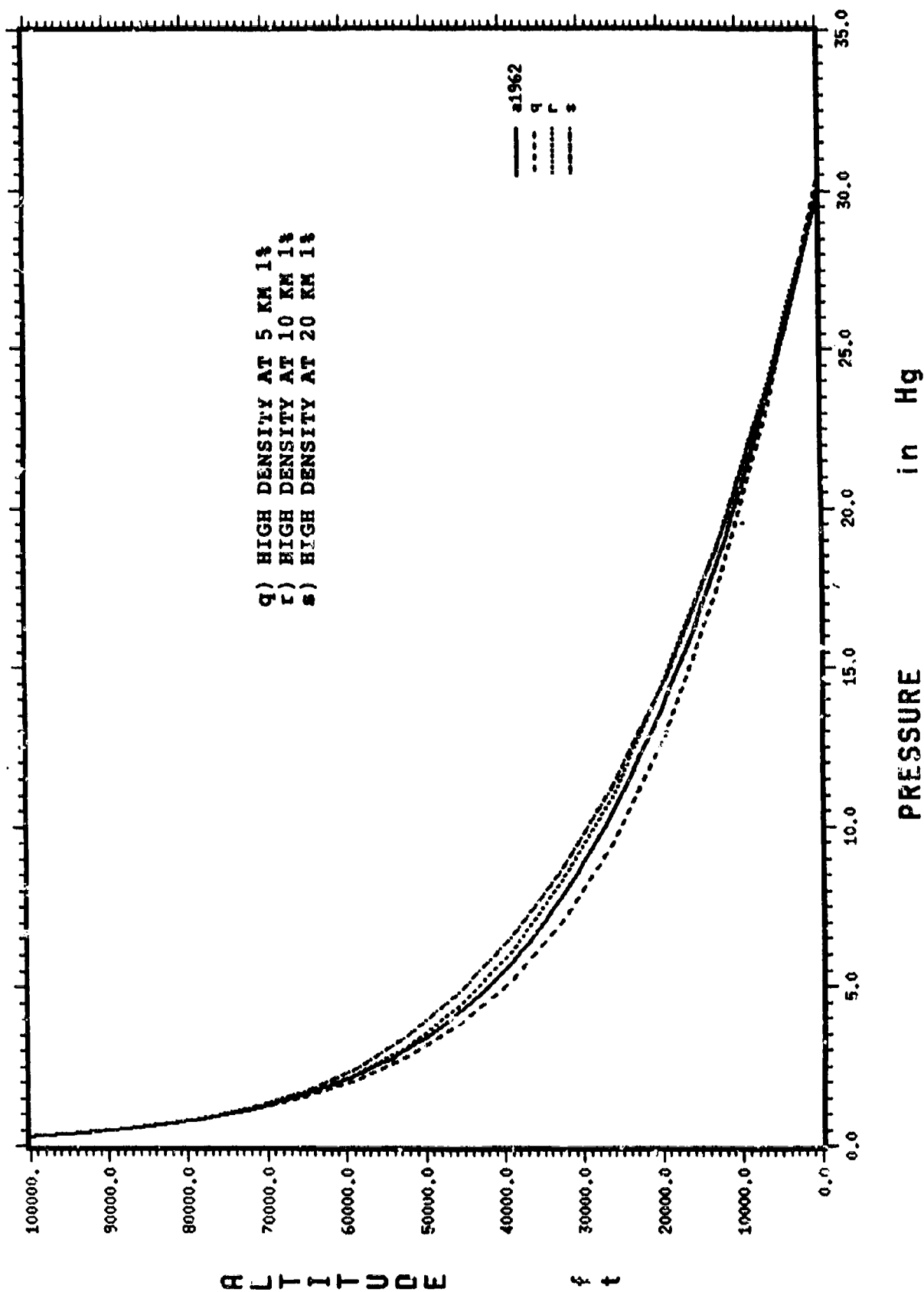


m) LOW TEMPERATURE AT 5 KM 1%  
 n) LOW TEMPERATURE AT 10 KM 1%  
 p) LOW TEMPERATURE AT 20 KM 1%

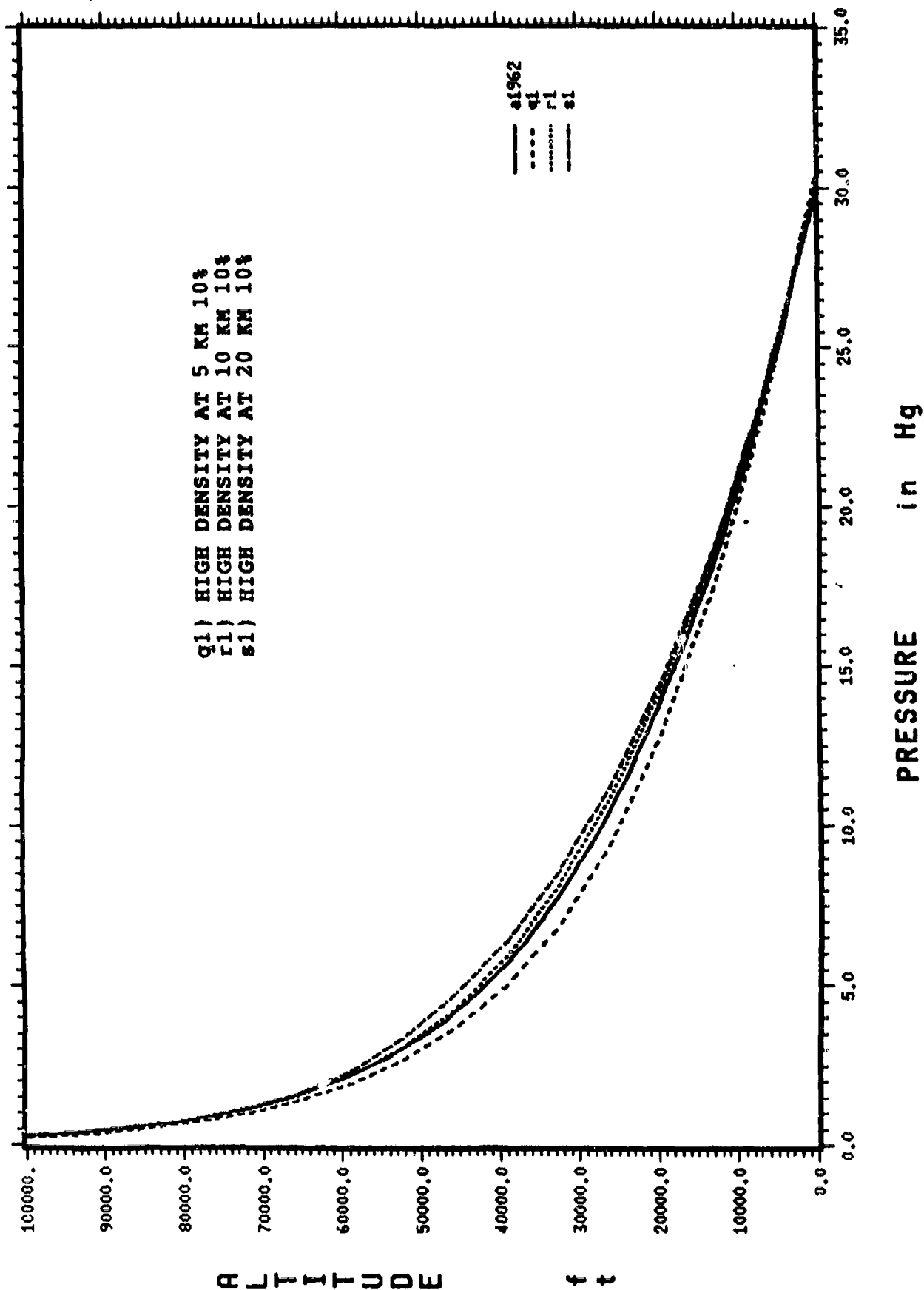
# PRESSURE COMPARISON 218C



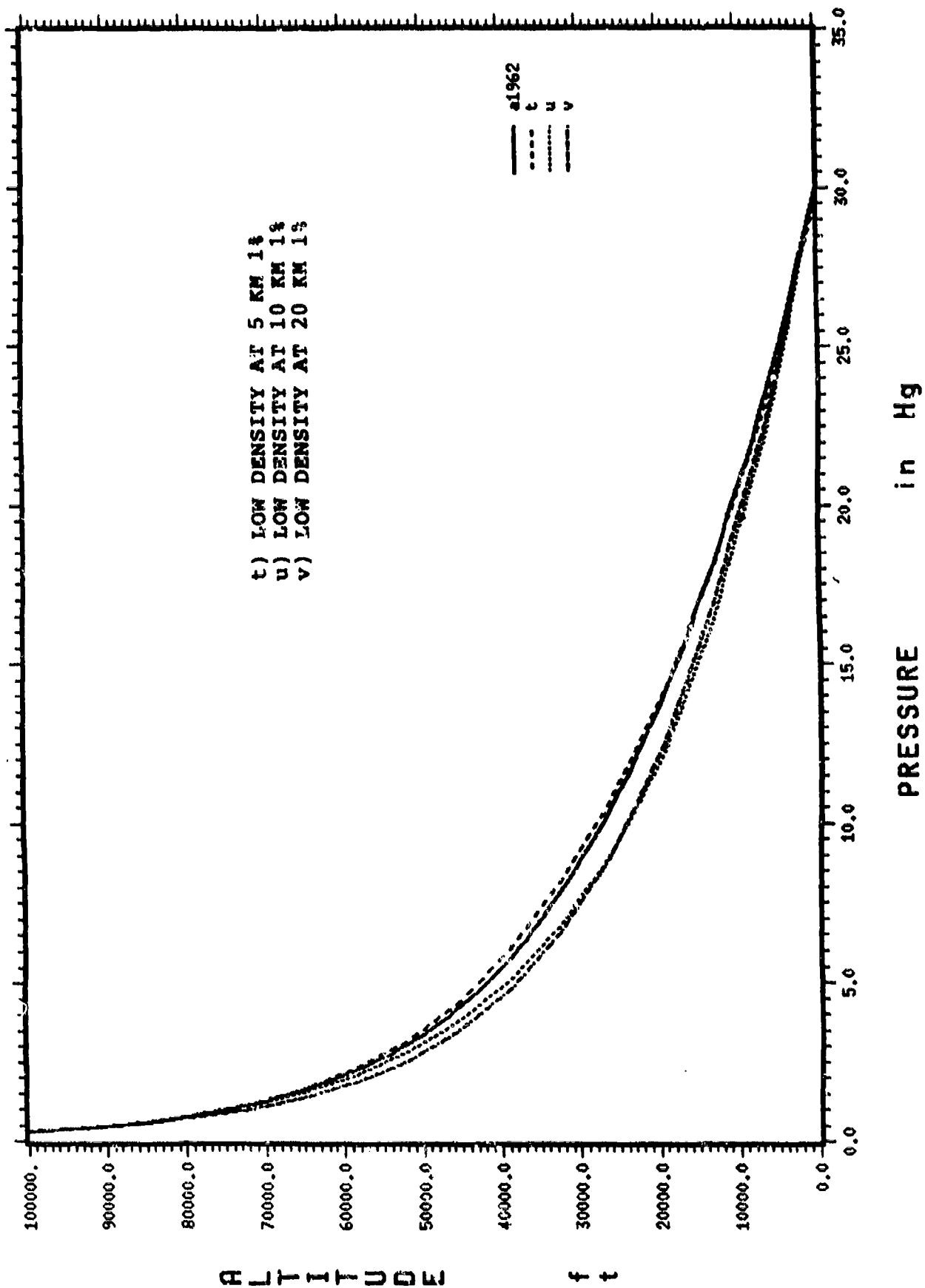
# PRESSURE COMPARISON 213C



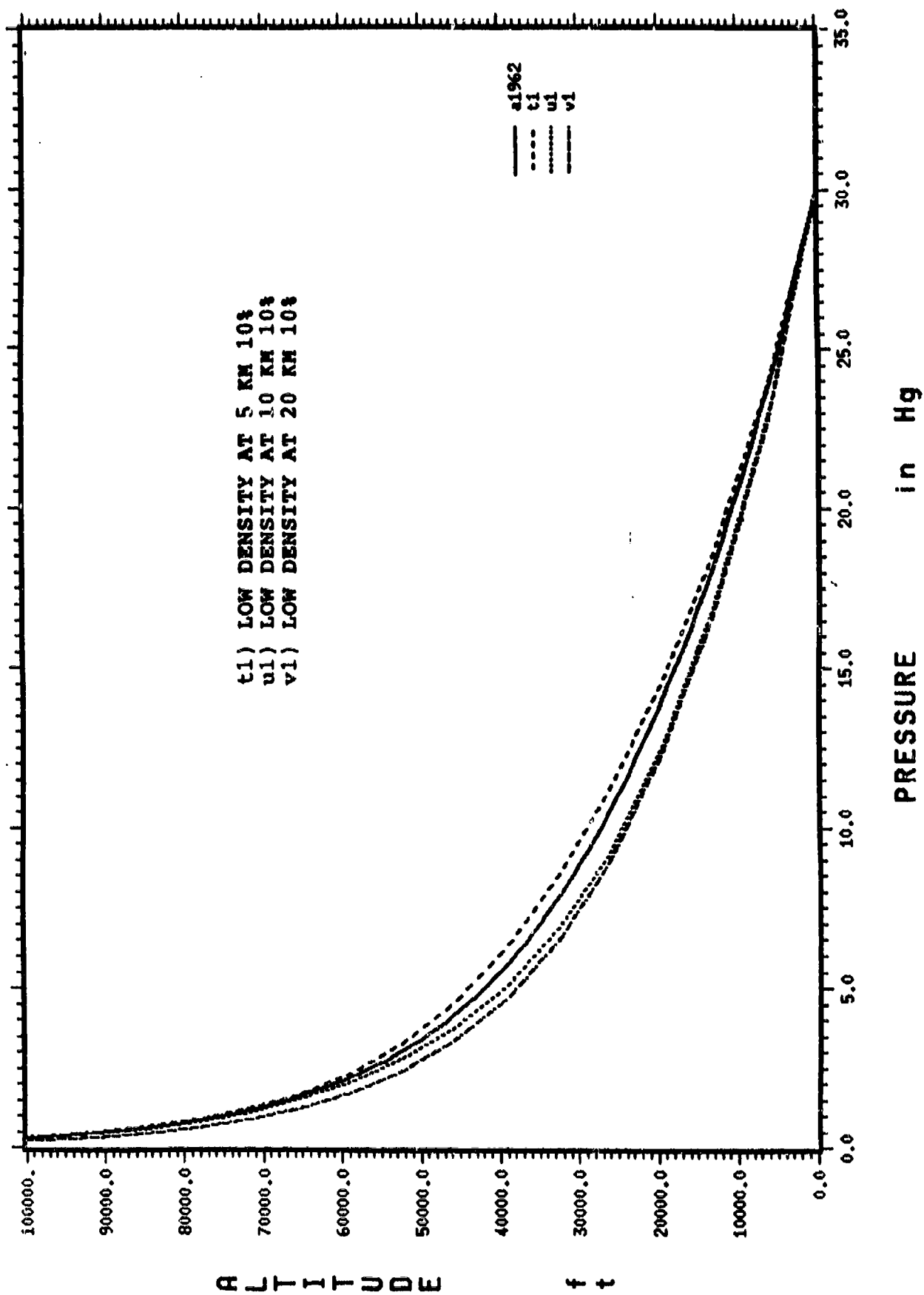
# PRESSURE COMPARISON 218C



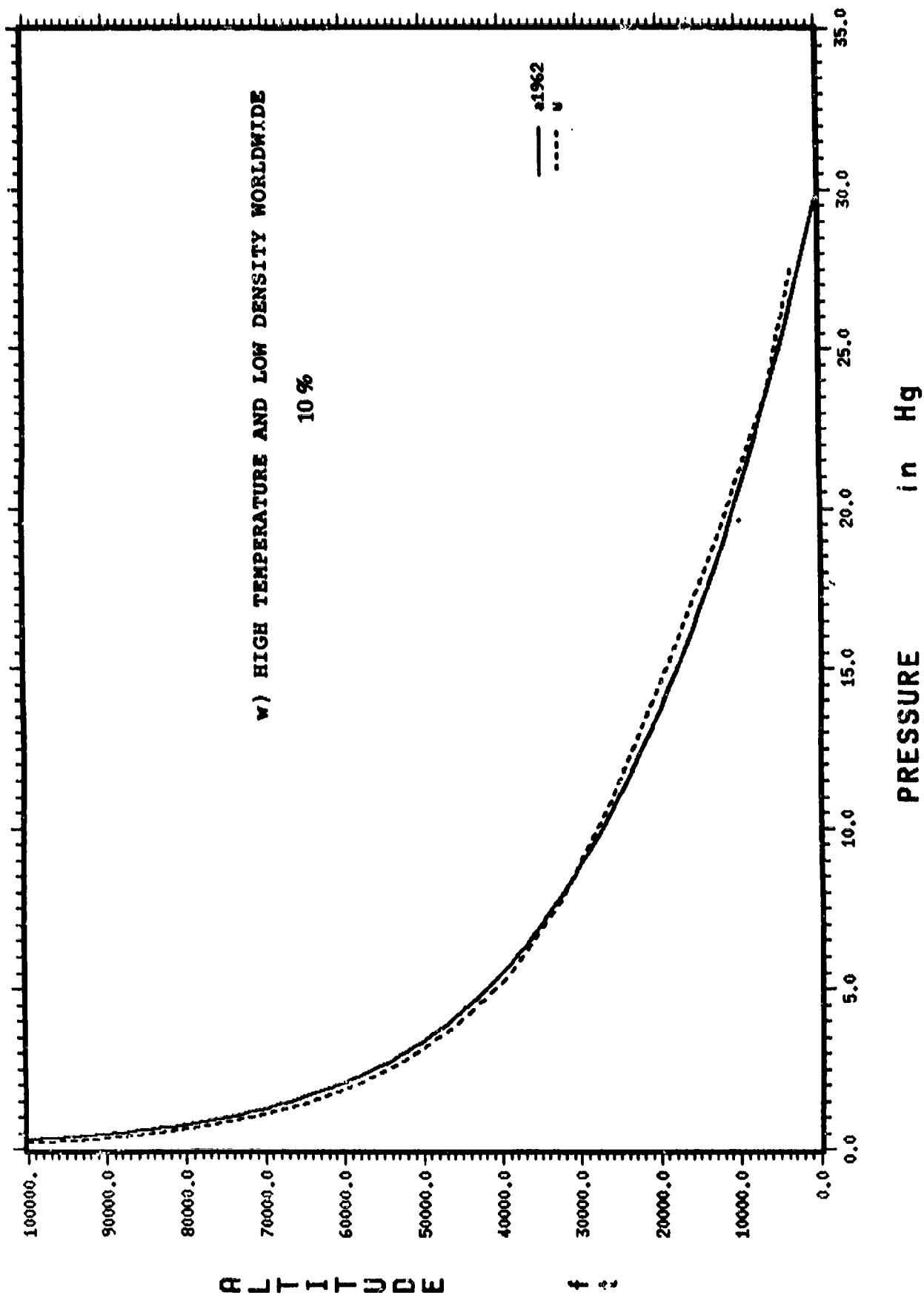
# PRESSURE COMPARISON 210C



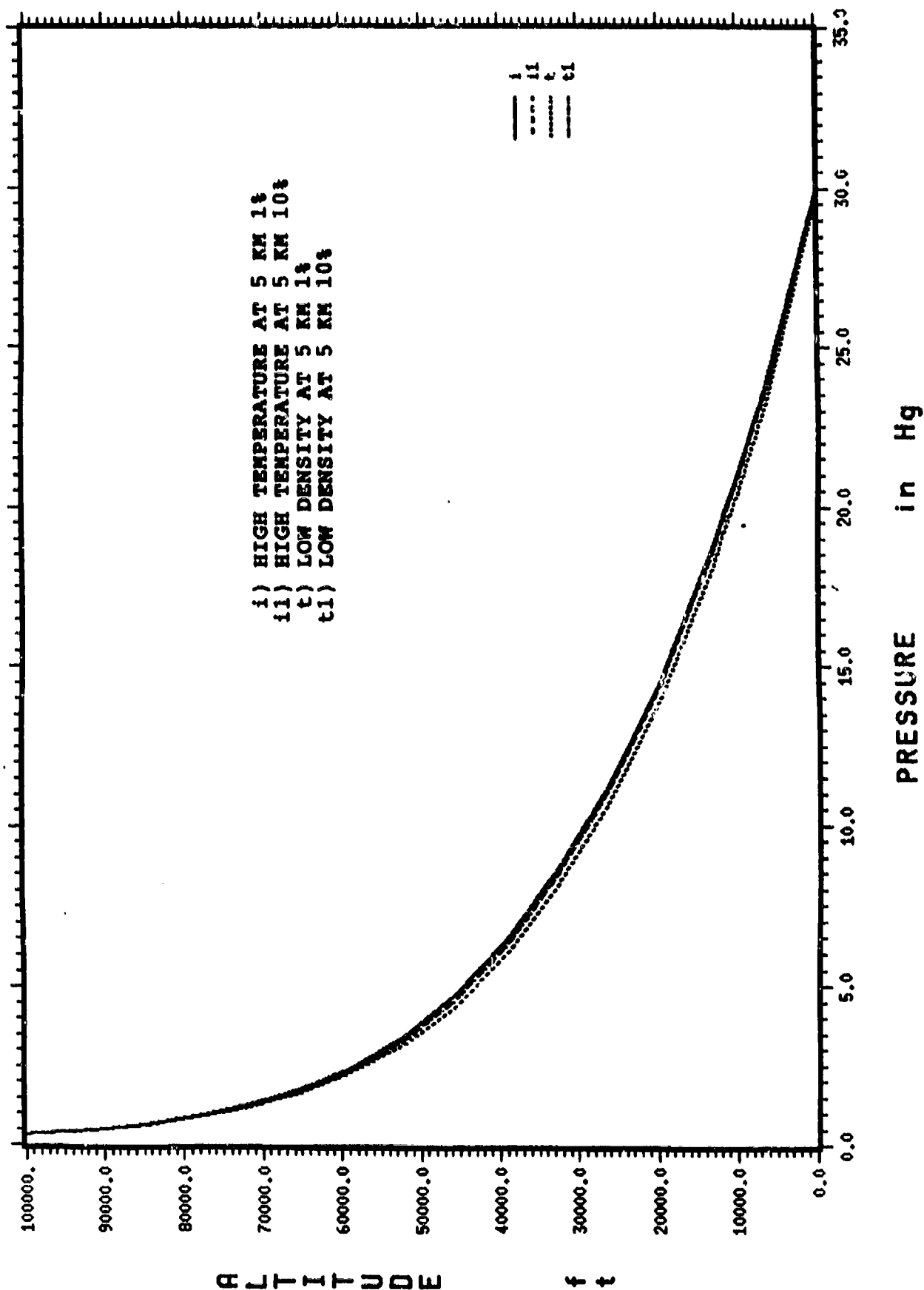
# PRESSURE COMPARISON 218C



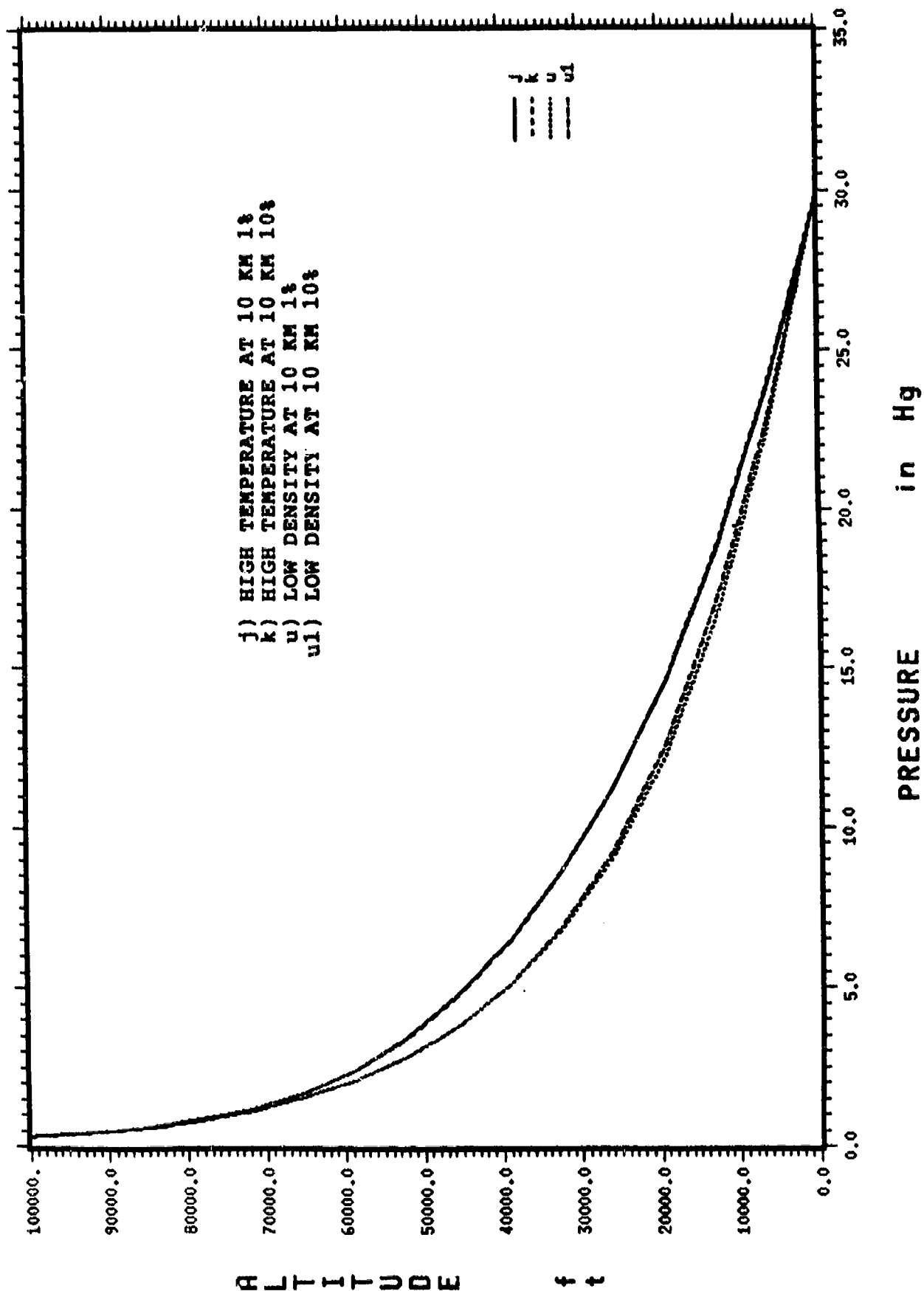
# PRESSURE COMPARISON 210C



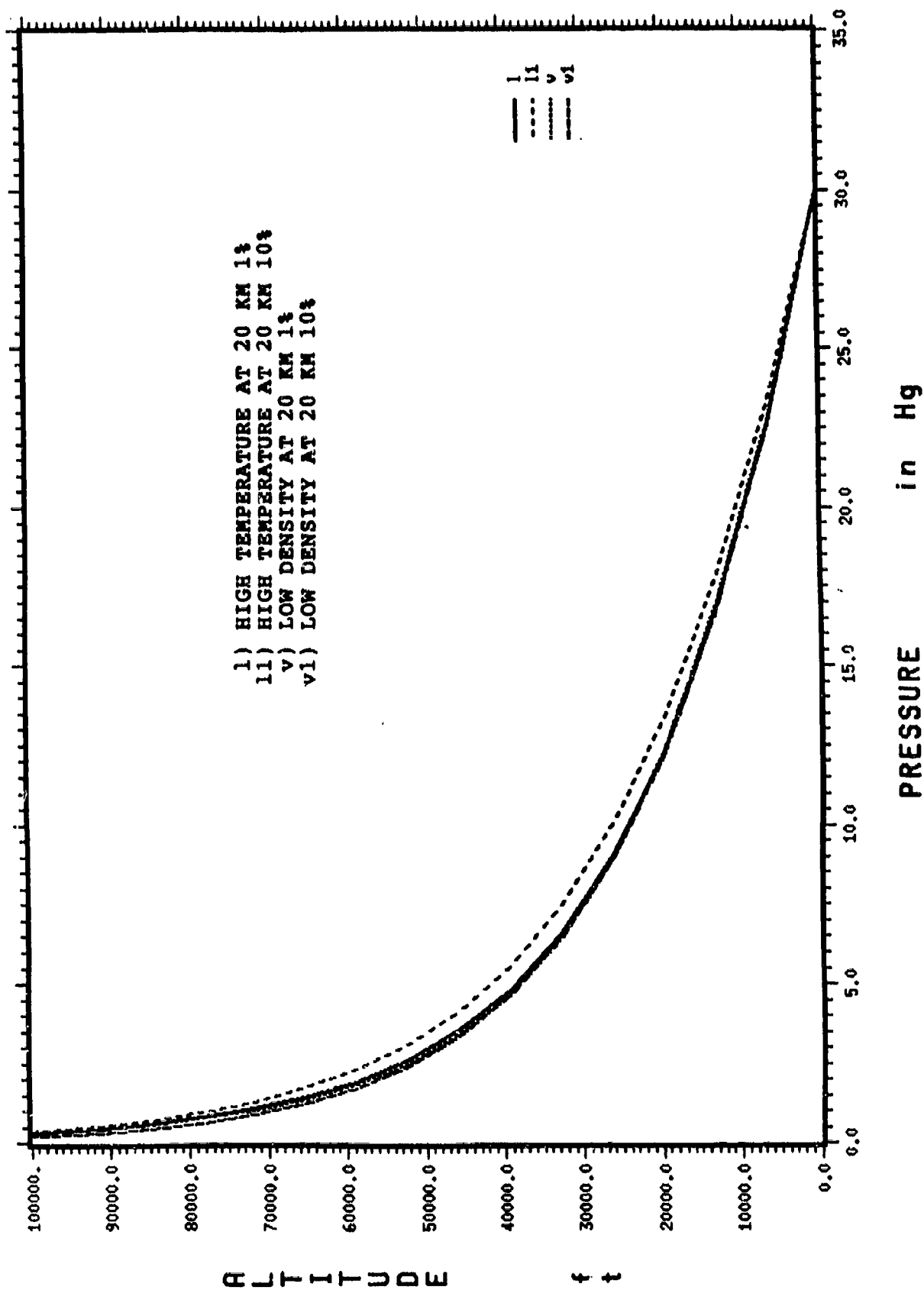
# PRESSURE COMPARISON 218C



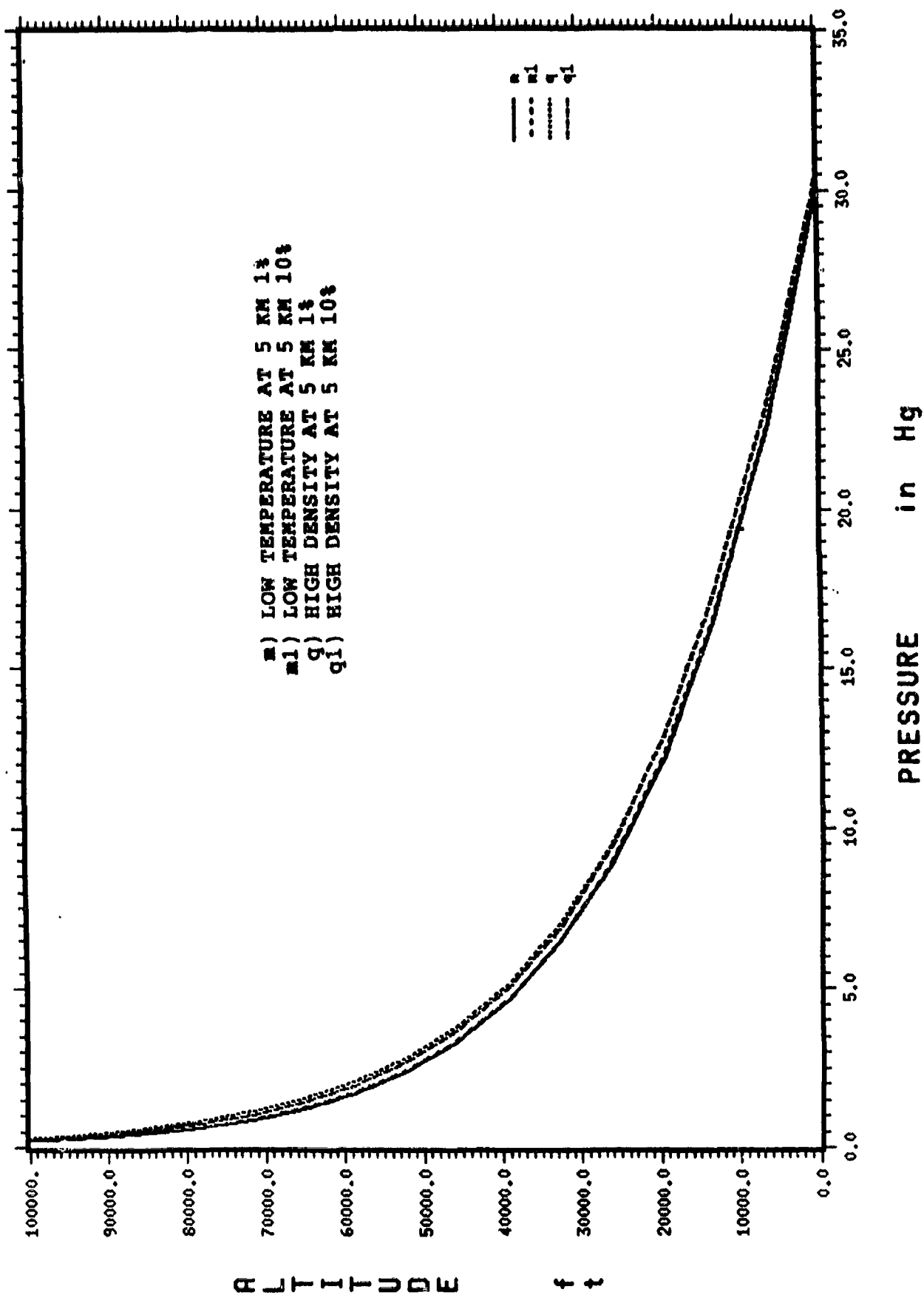
# PRESSURE COMPARISON 210C



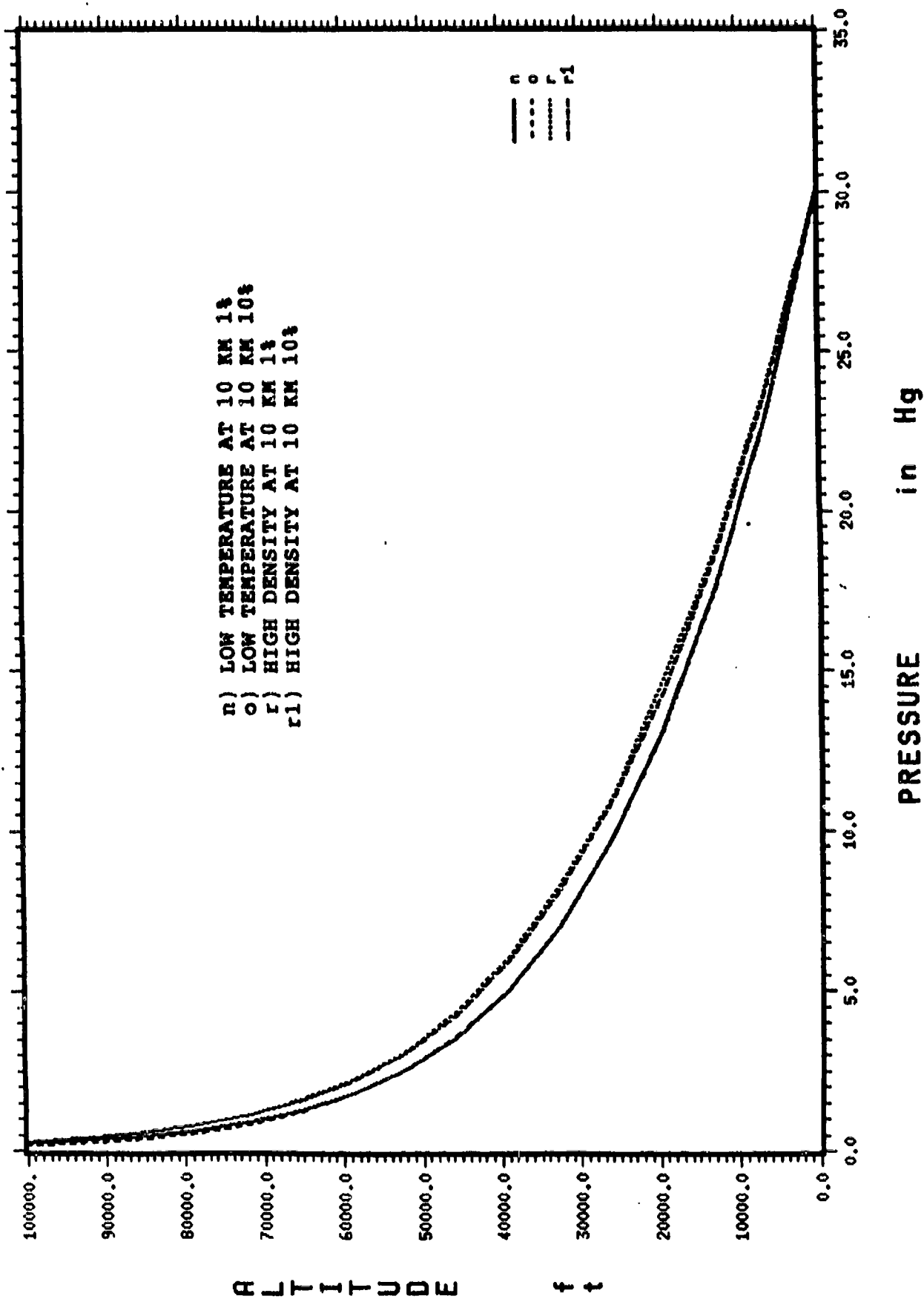
# PRESSURE COMPARISON 218C



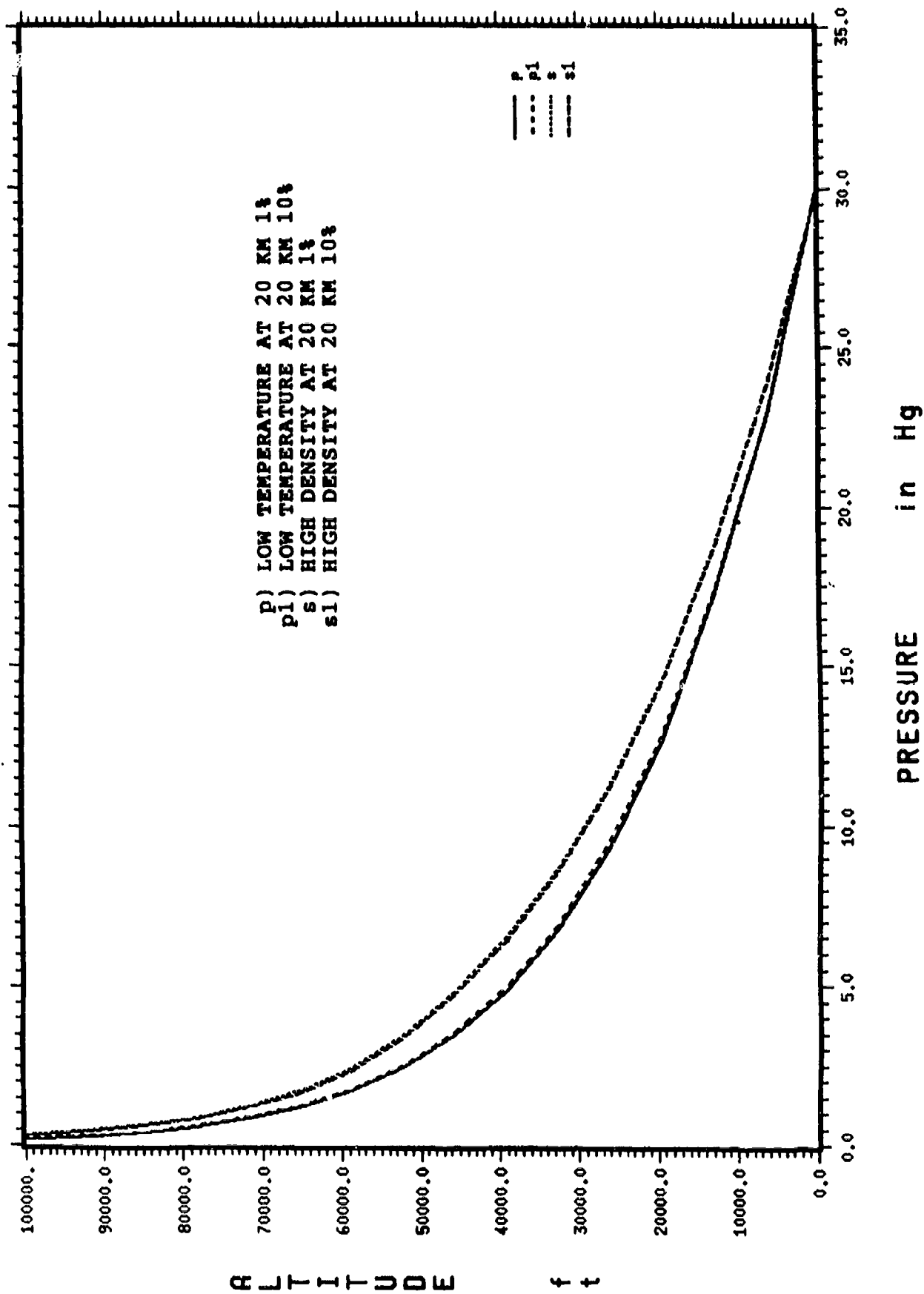
# PRESSURE COMPARISON 210C



# PRESSURE COMPARISON 218C

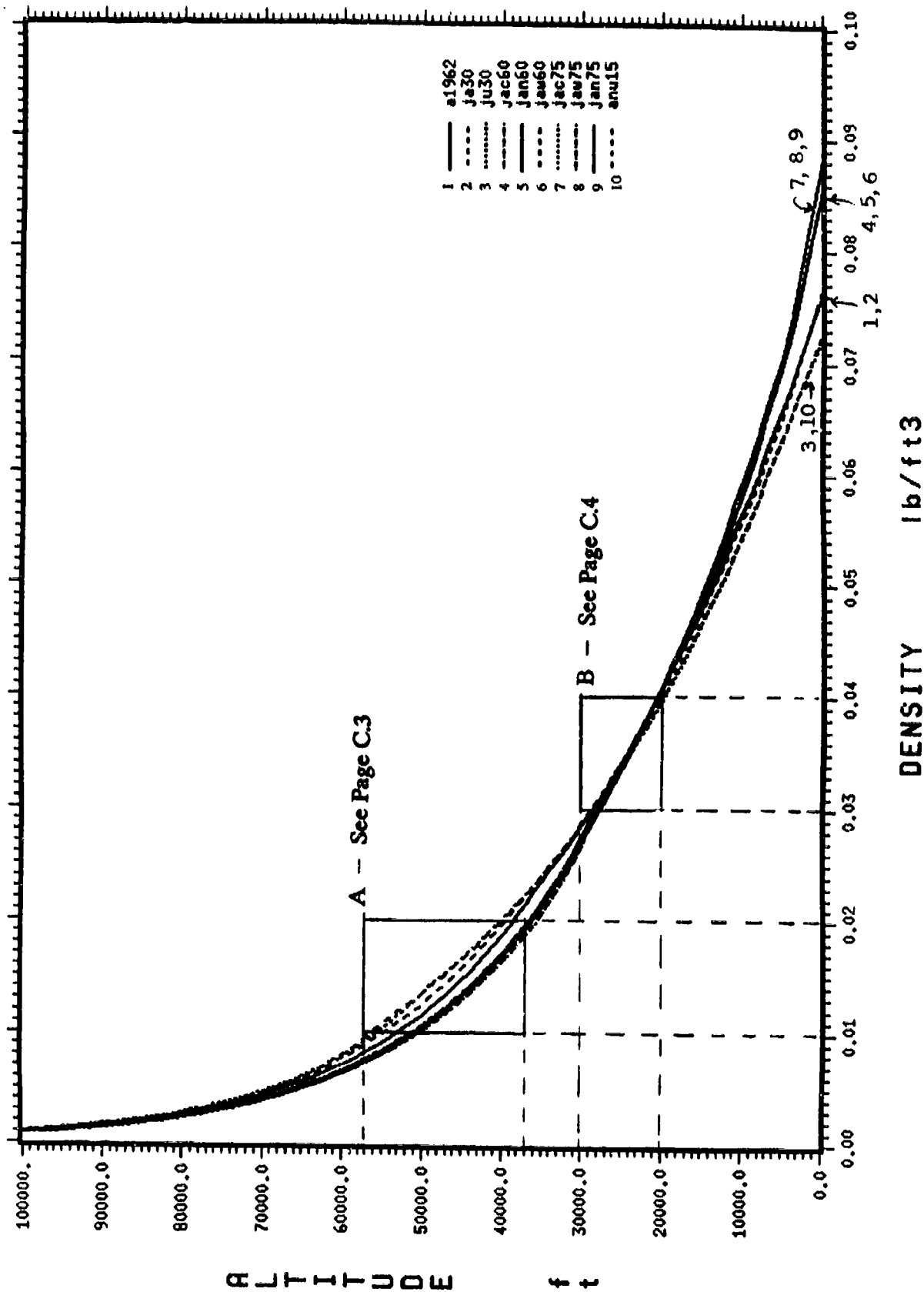


# PRESSURE COMPARISON 218C

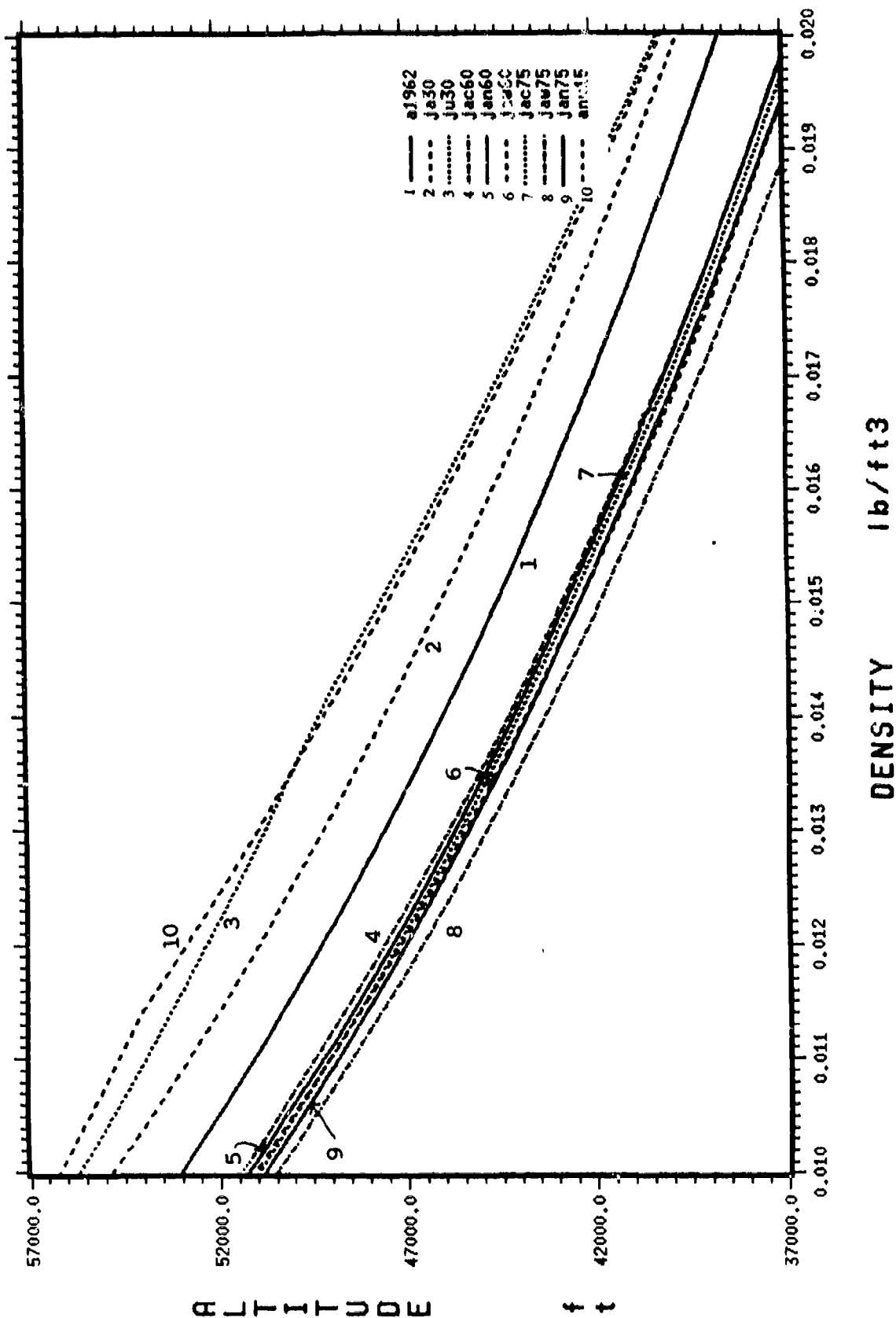


**APPENDIX C.  
DENSITY PROFILES**

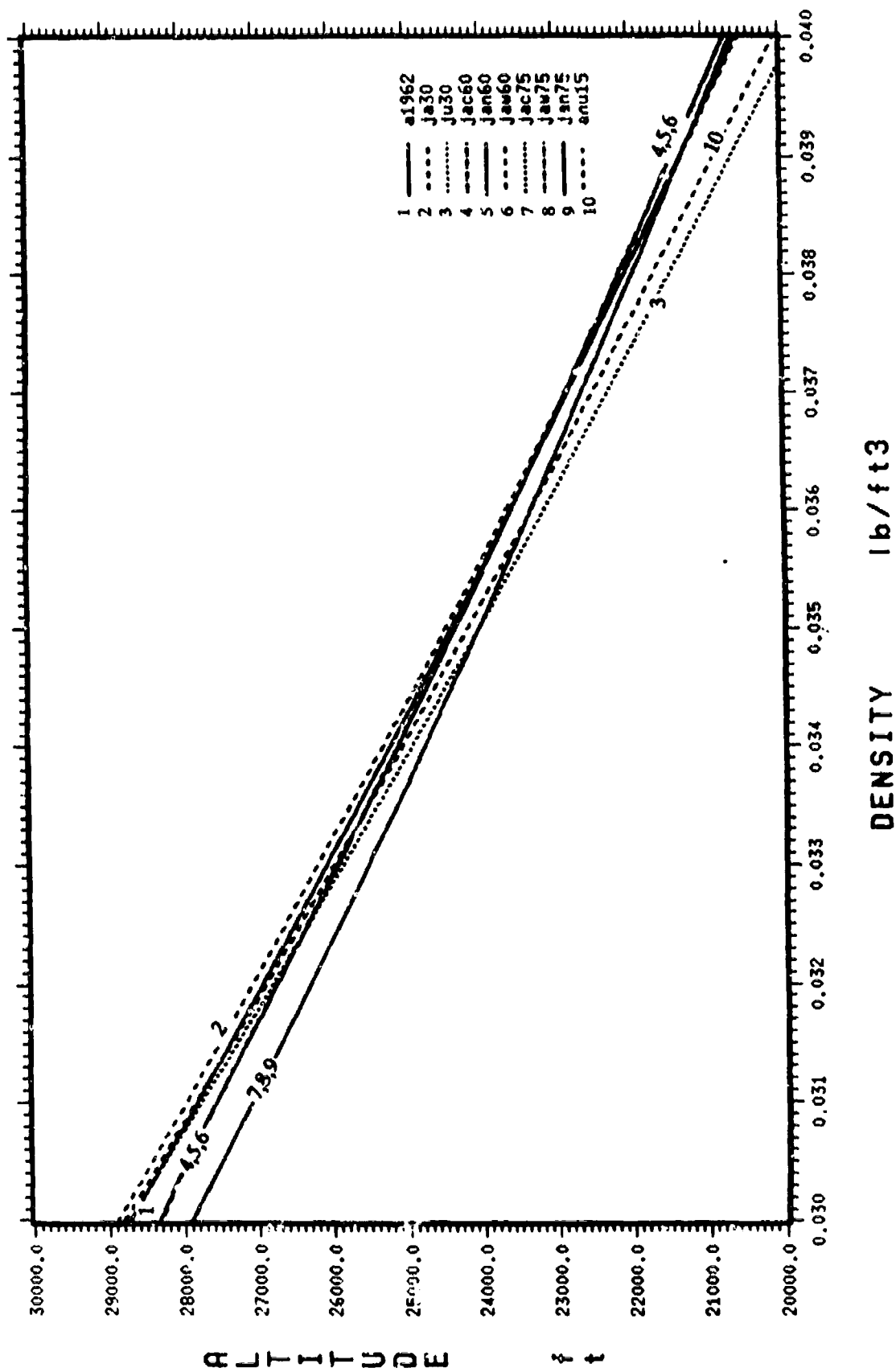
# DENSITY COMPARISON 1966 Standard Atmosphere 15°-75° N. Lat.



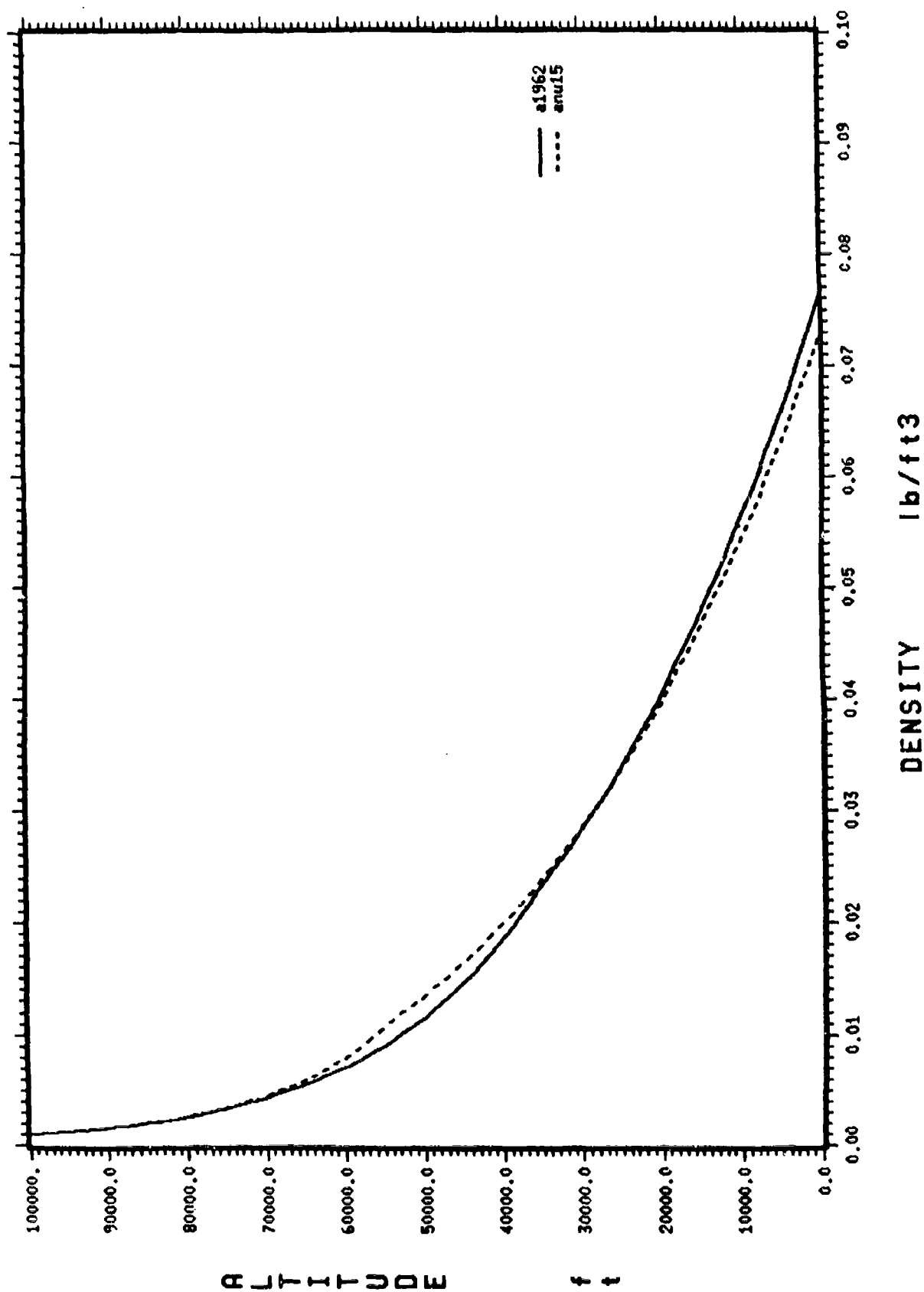
# DENSITY COMPARISON Enlargement A



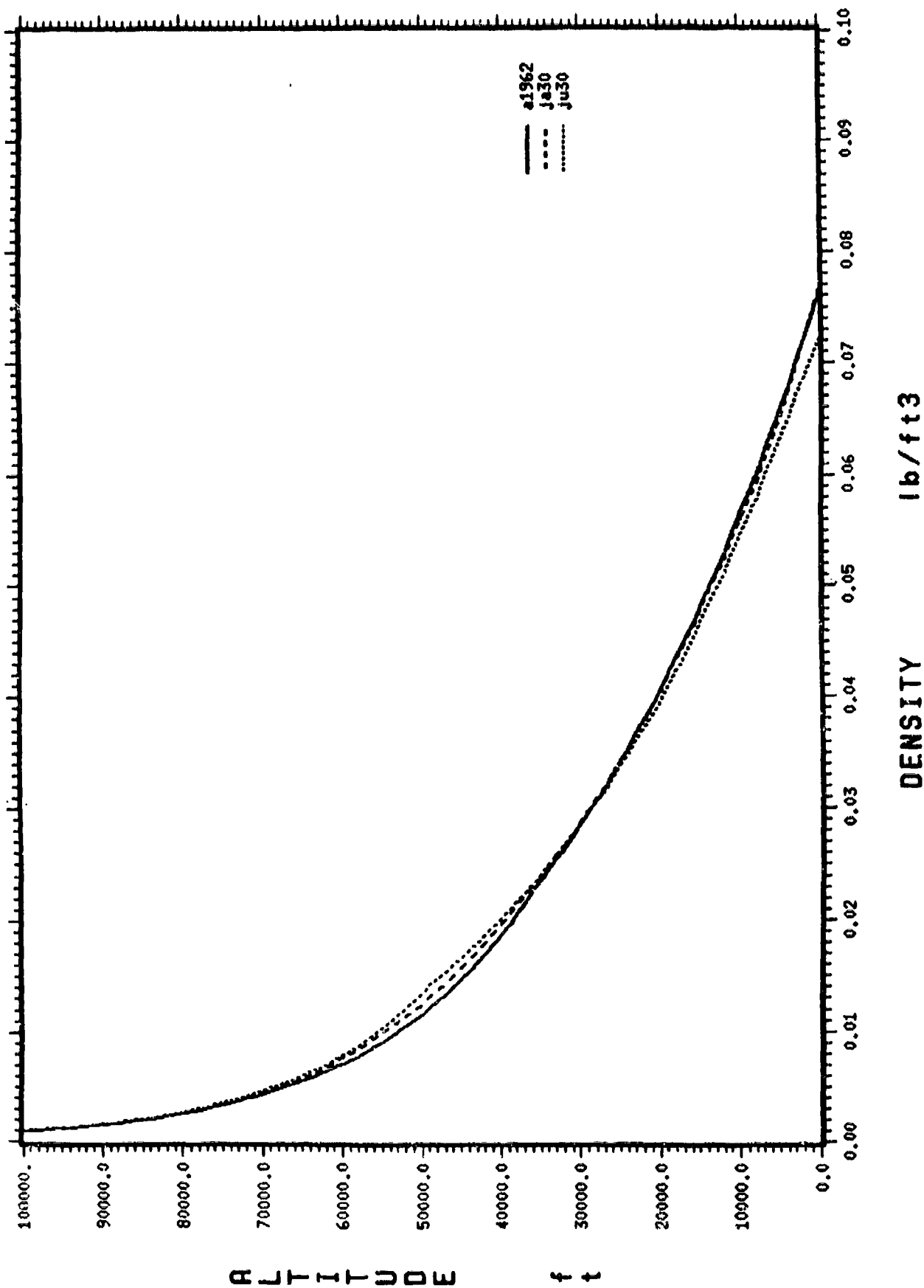
# DENSITY COMPARISON Enlargement B



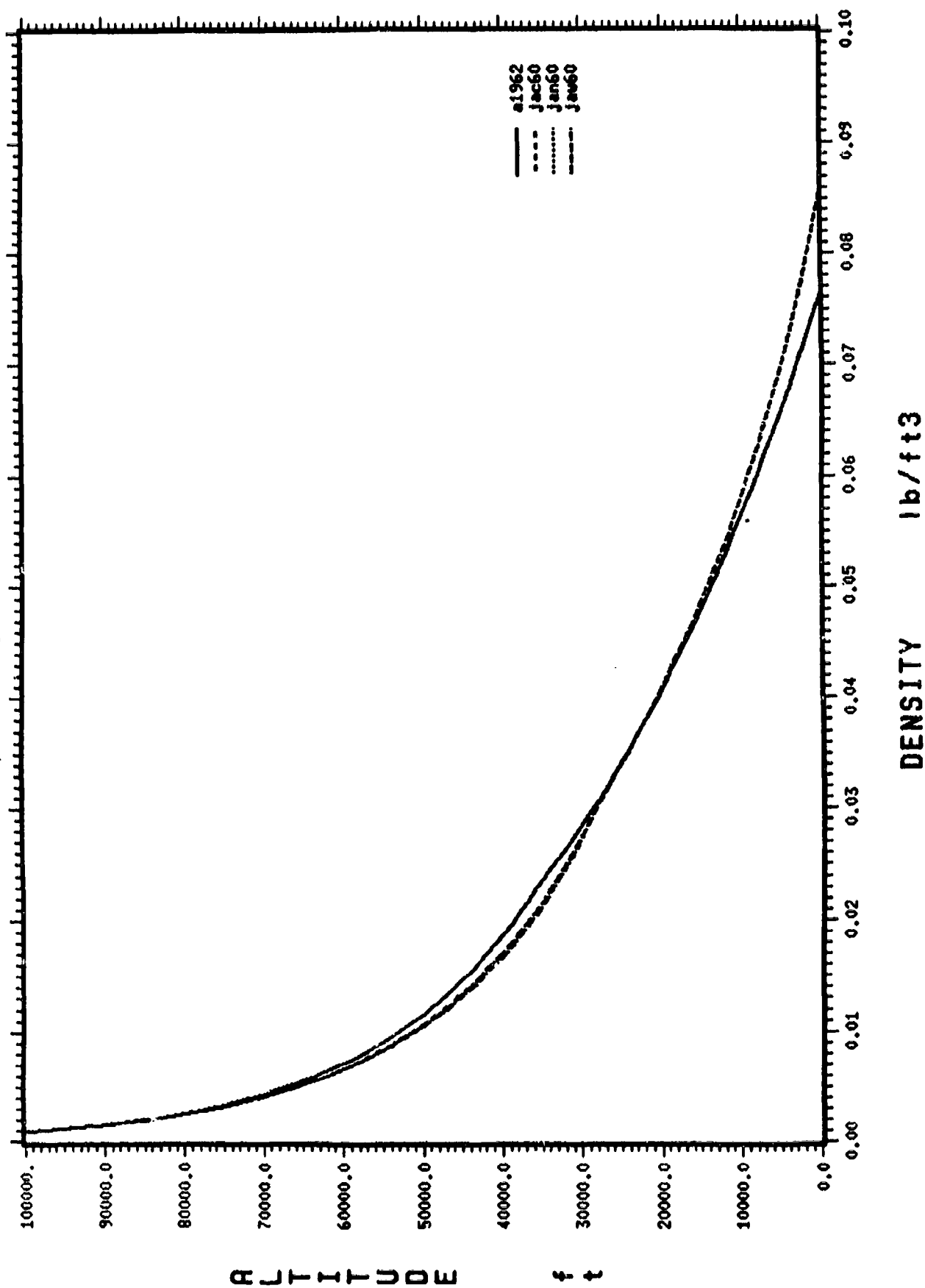
DENSITY COMPARISON  
1966 Standard Atmosphere 15° N. Lat.



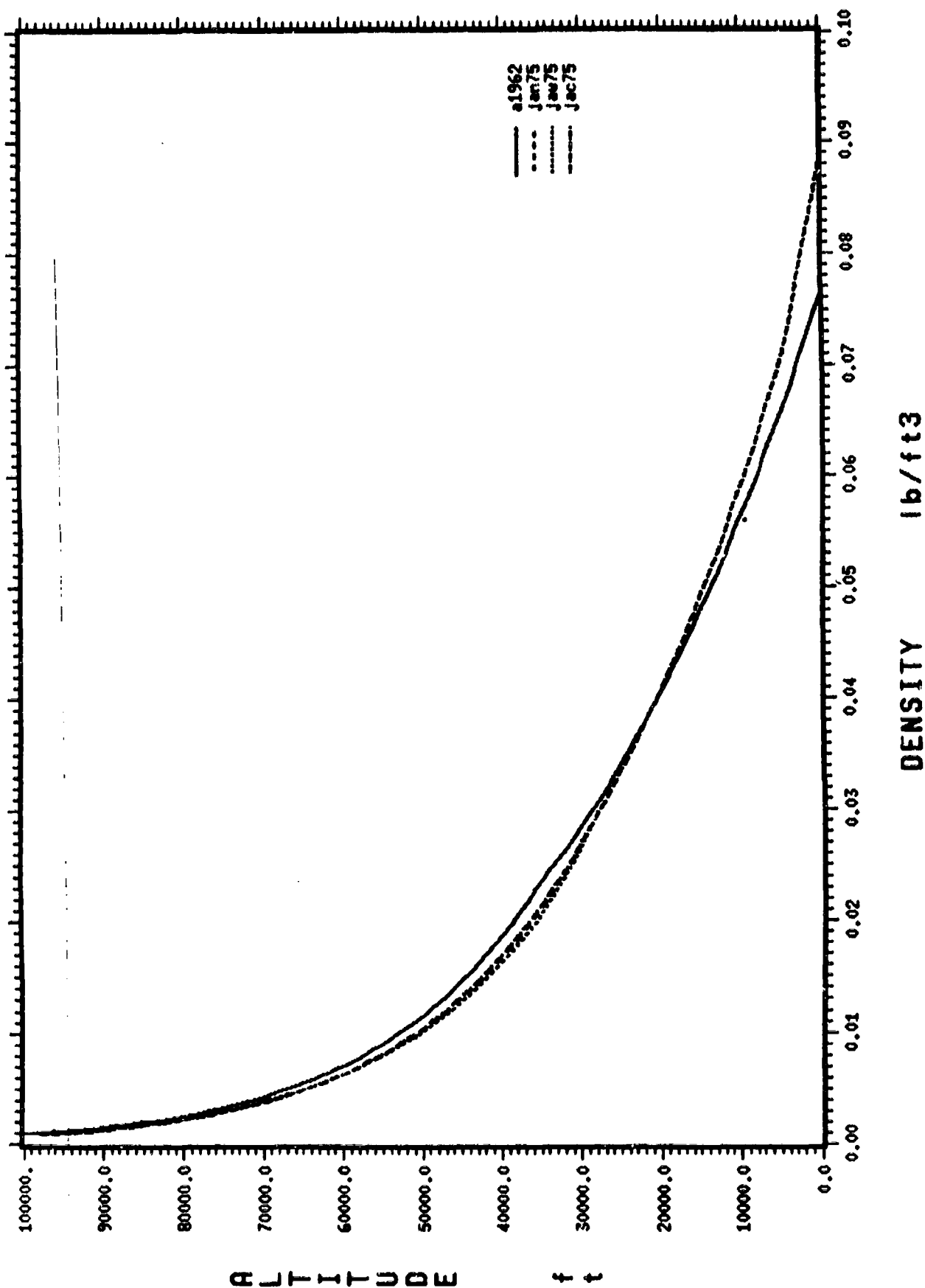
# DENSITY COMPARISON 1966 Standard Atmosphere 30° N. Lat.



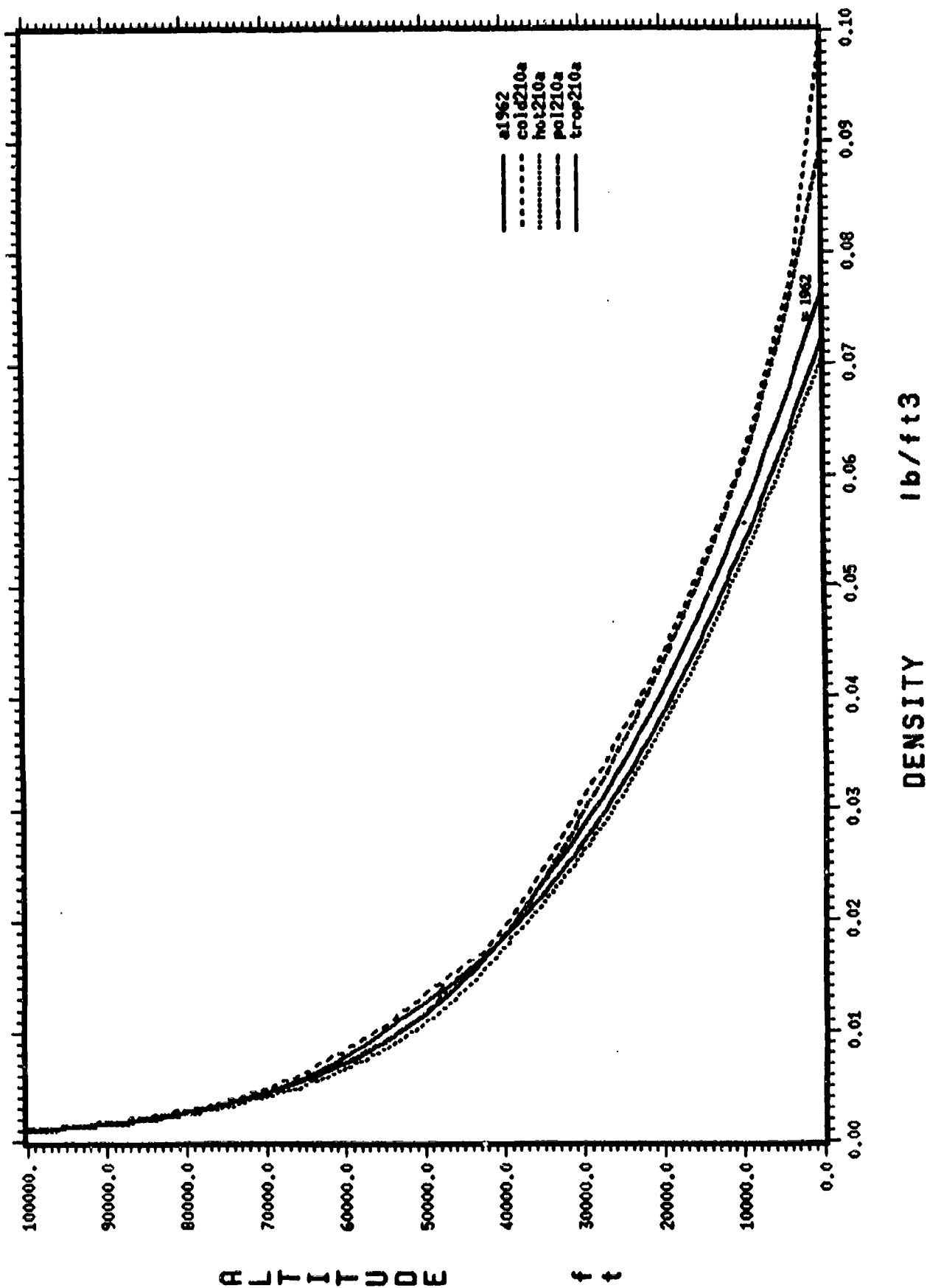
# DENSITY COMPARISON 1966 Standard Atmosphere 60° N. Lat.



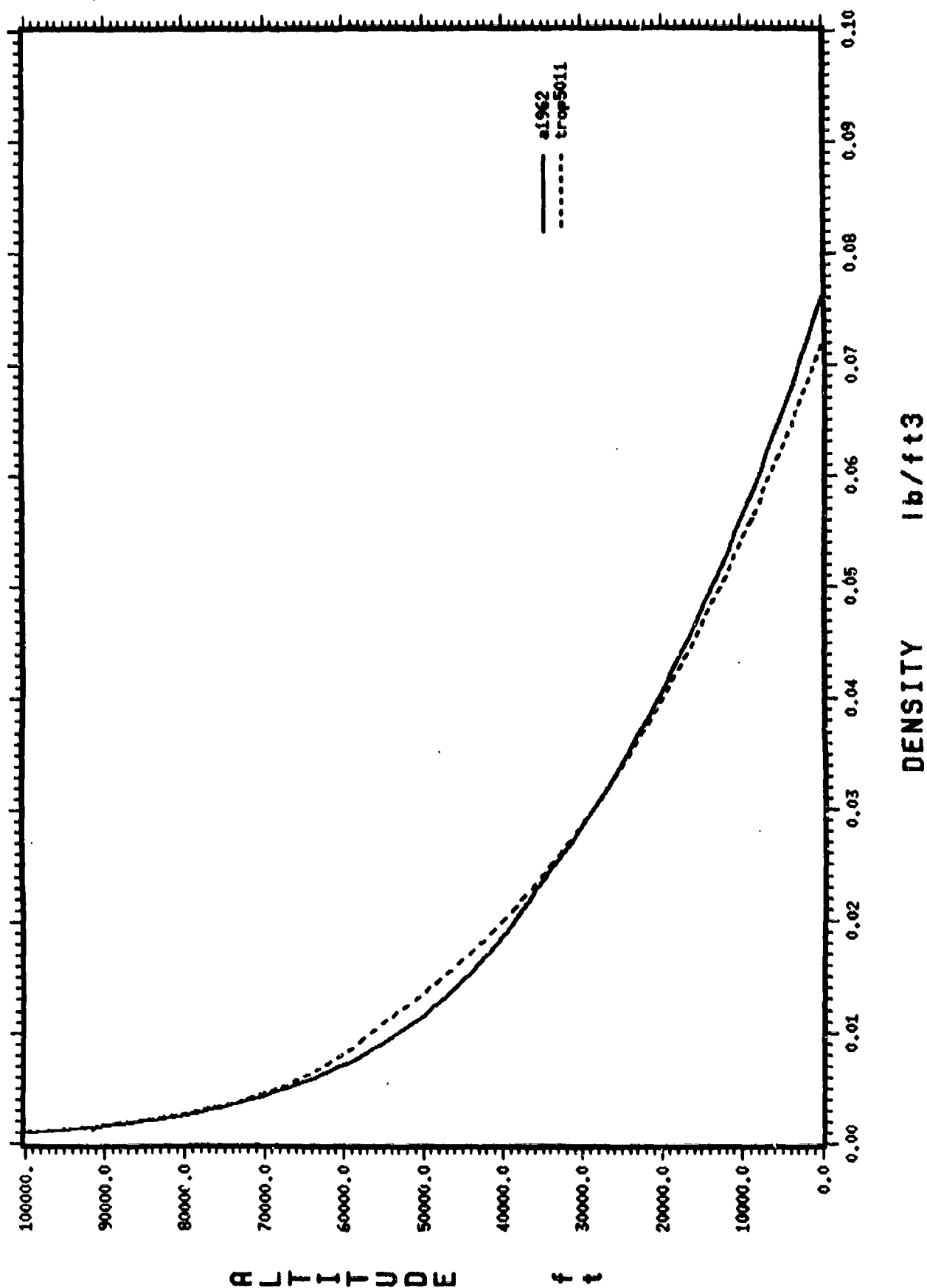
# DENSITY COMPARISON 1966 Standard Atmosphere 75° N. Lat.



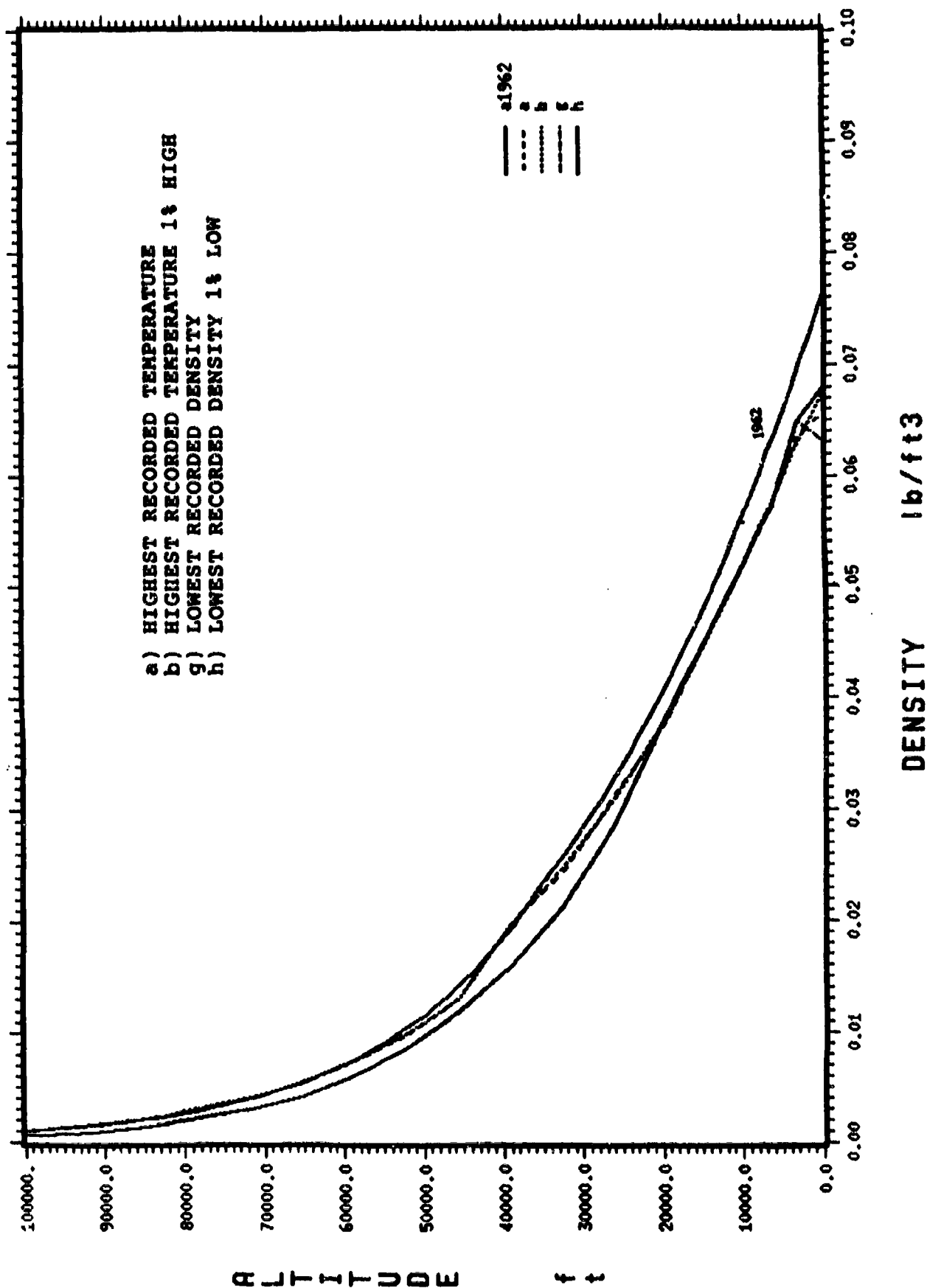
# DENSITY COMPARISON 210R



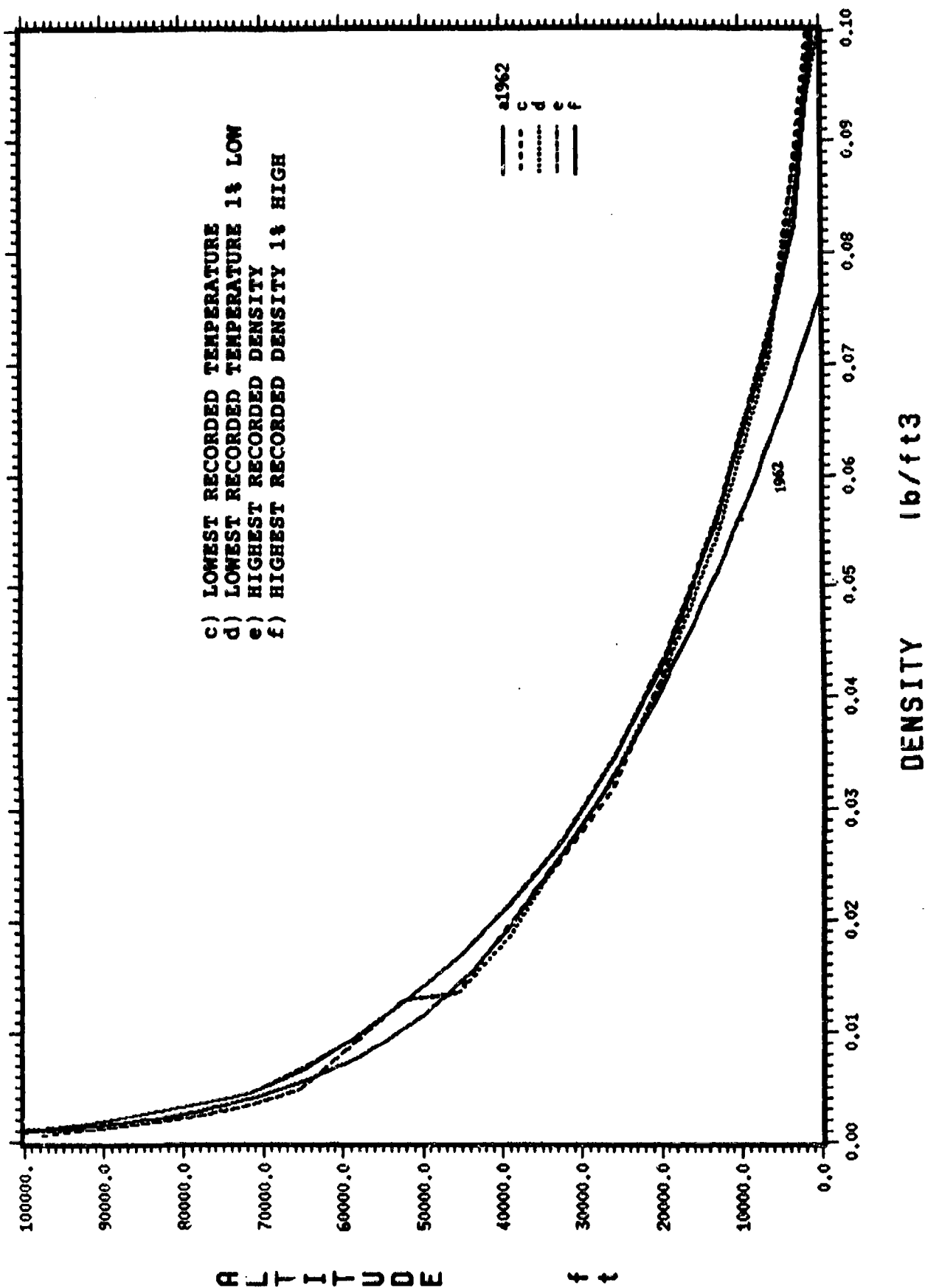
# DENSITY COMPARISON 5811B



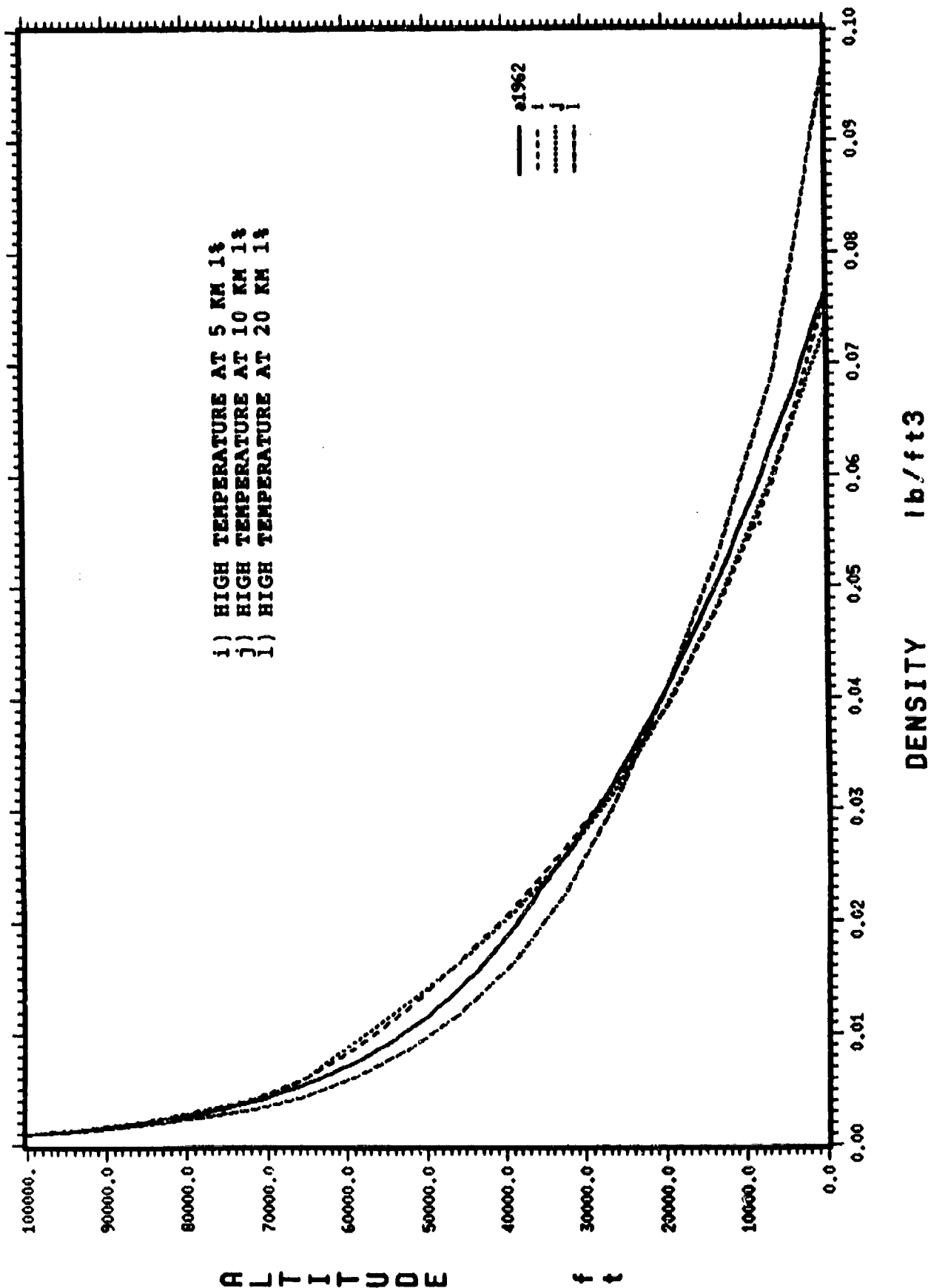
# DENSITY COMPARISON 218C



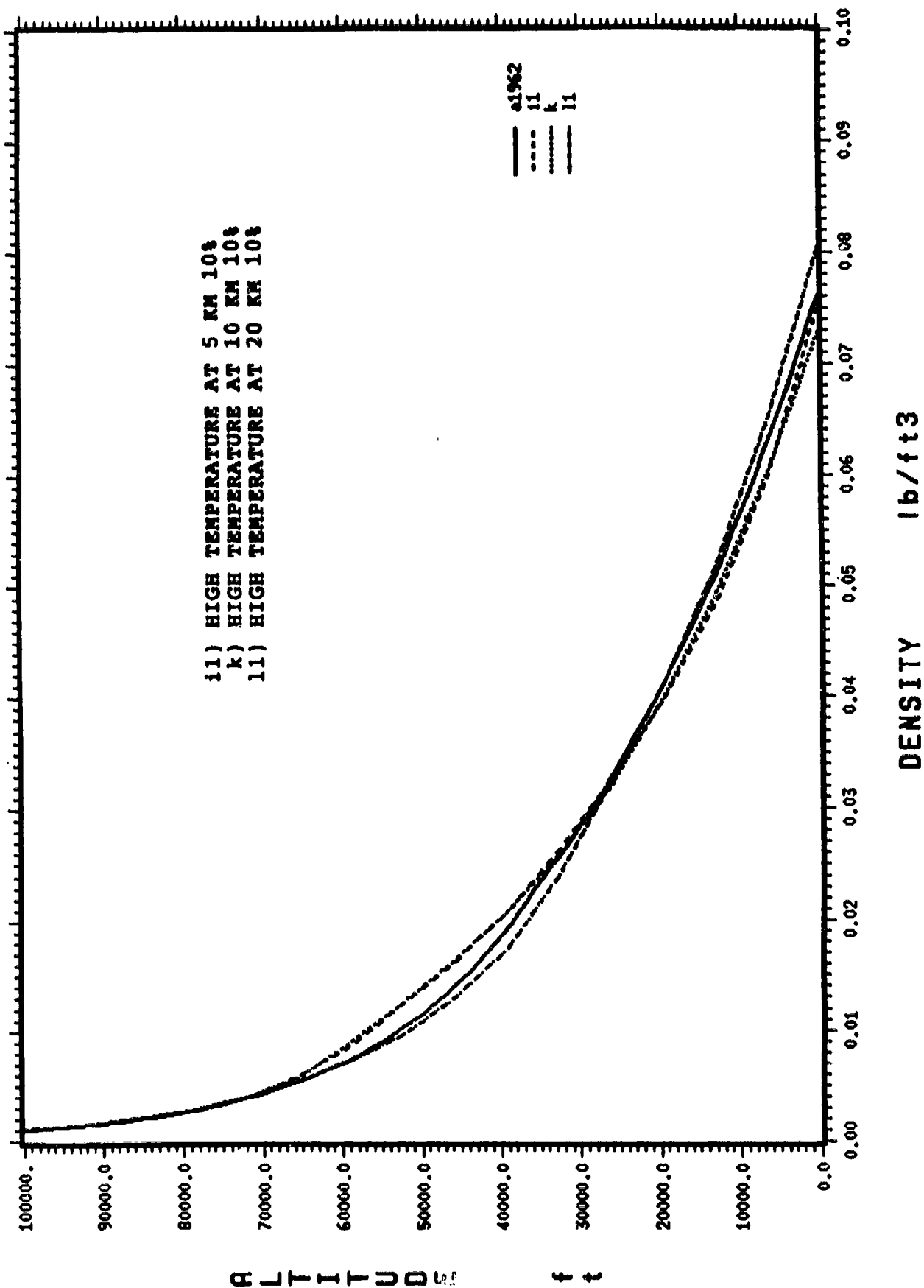
# DENSITY COMPARISON 210C



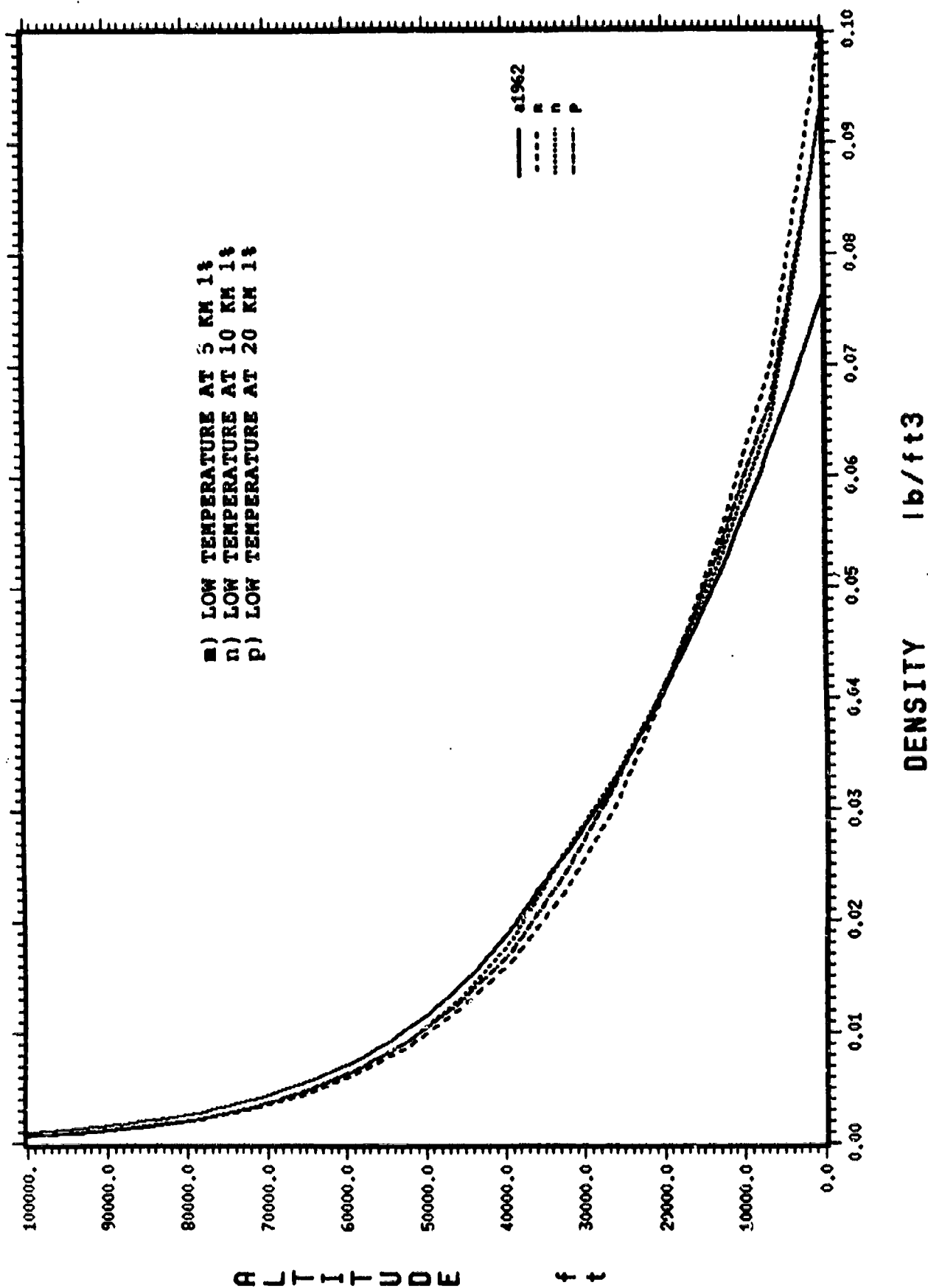
# DENSITY COMPARISON 218C



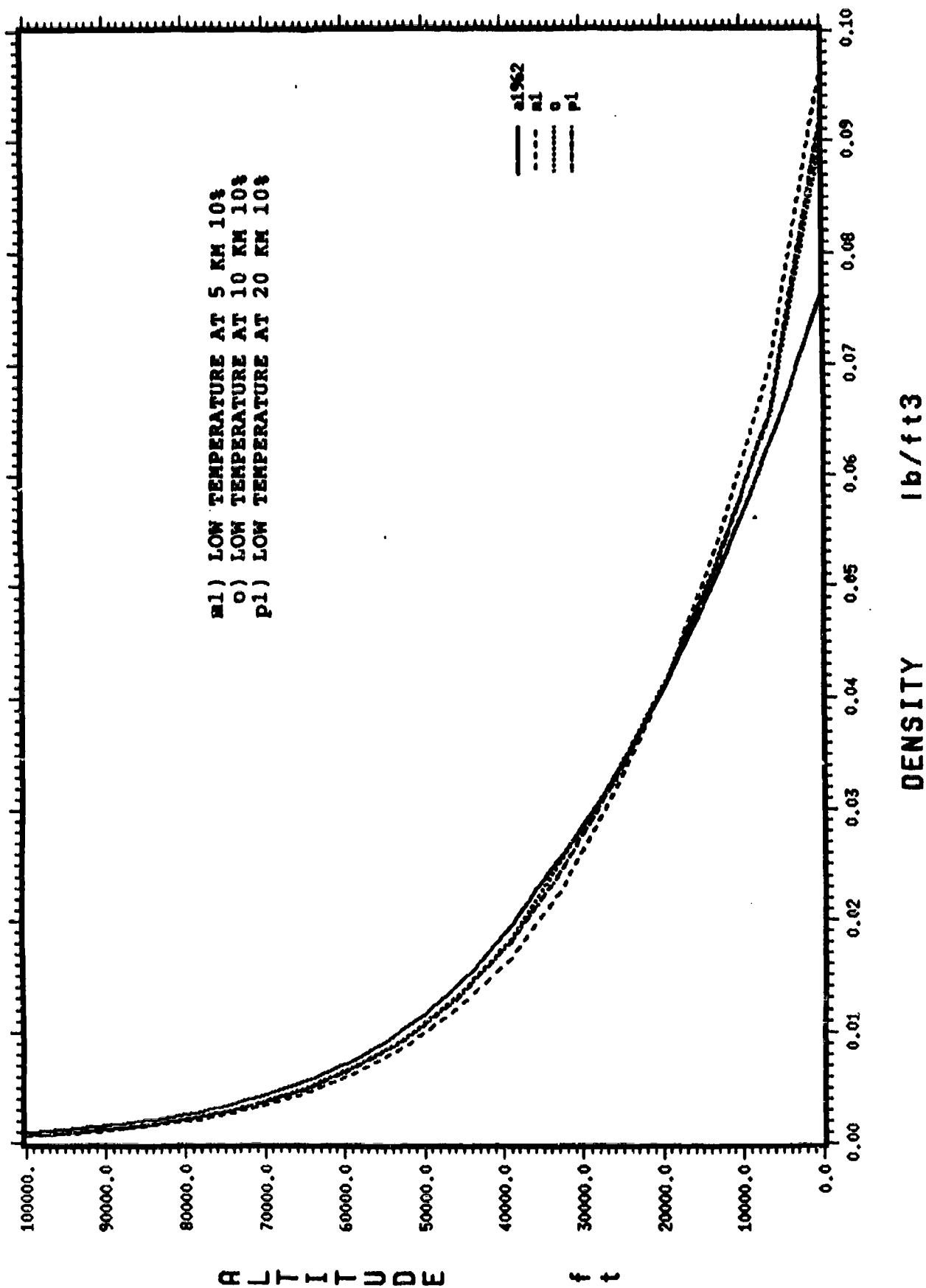
# DENSITY COMPARISON 218C



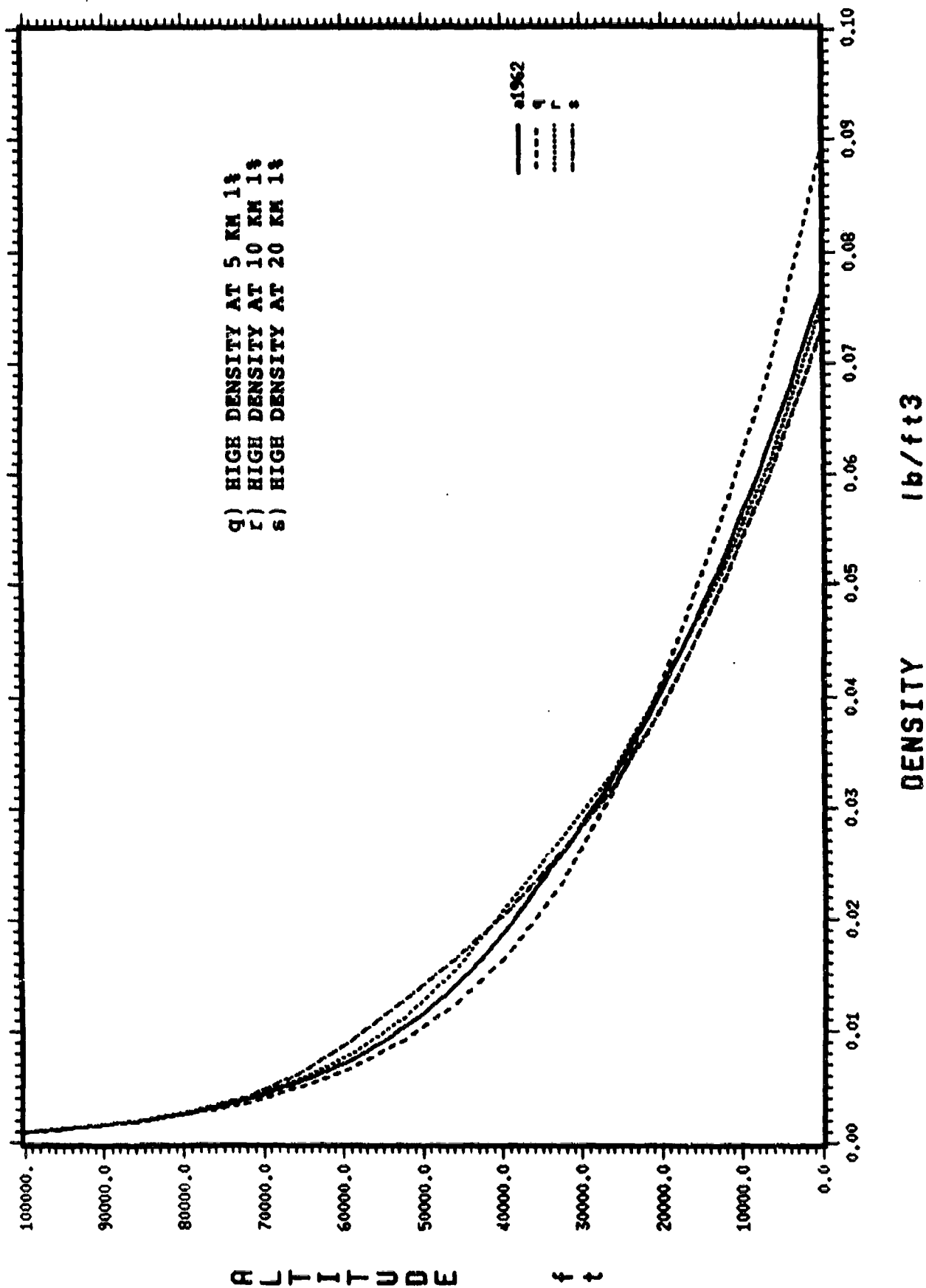
# DENSITY COMPARISON 210C



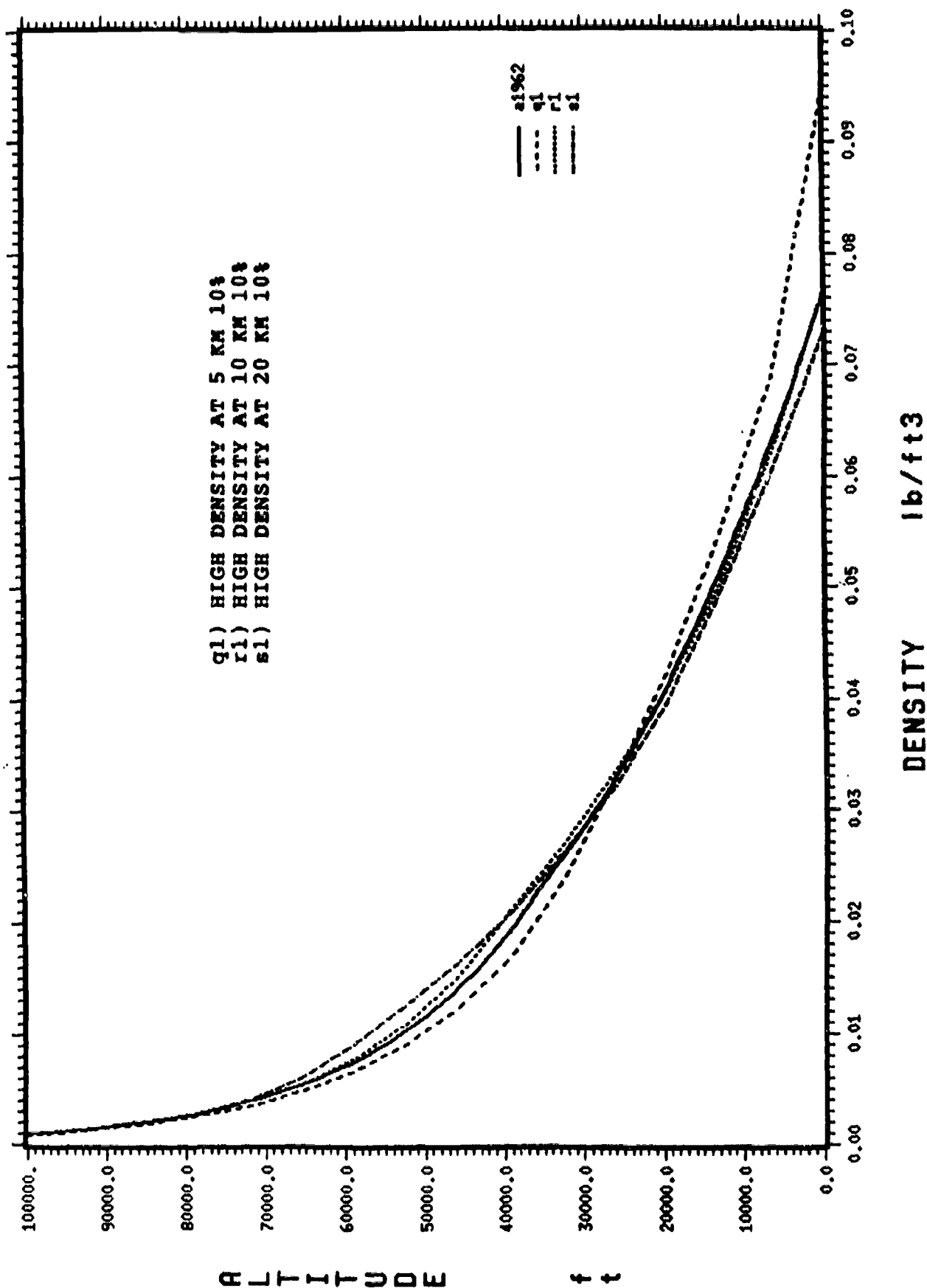
# DENSITY COMPARISON 210C



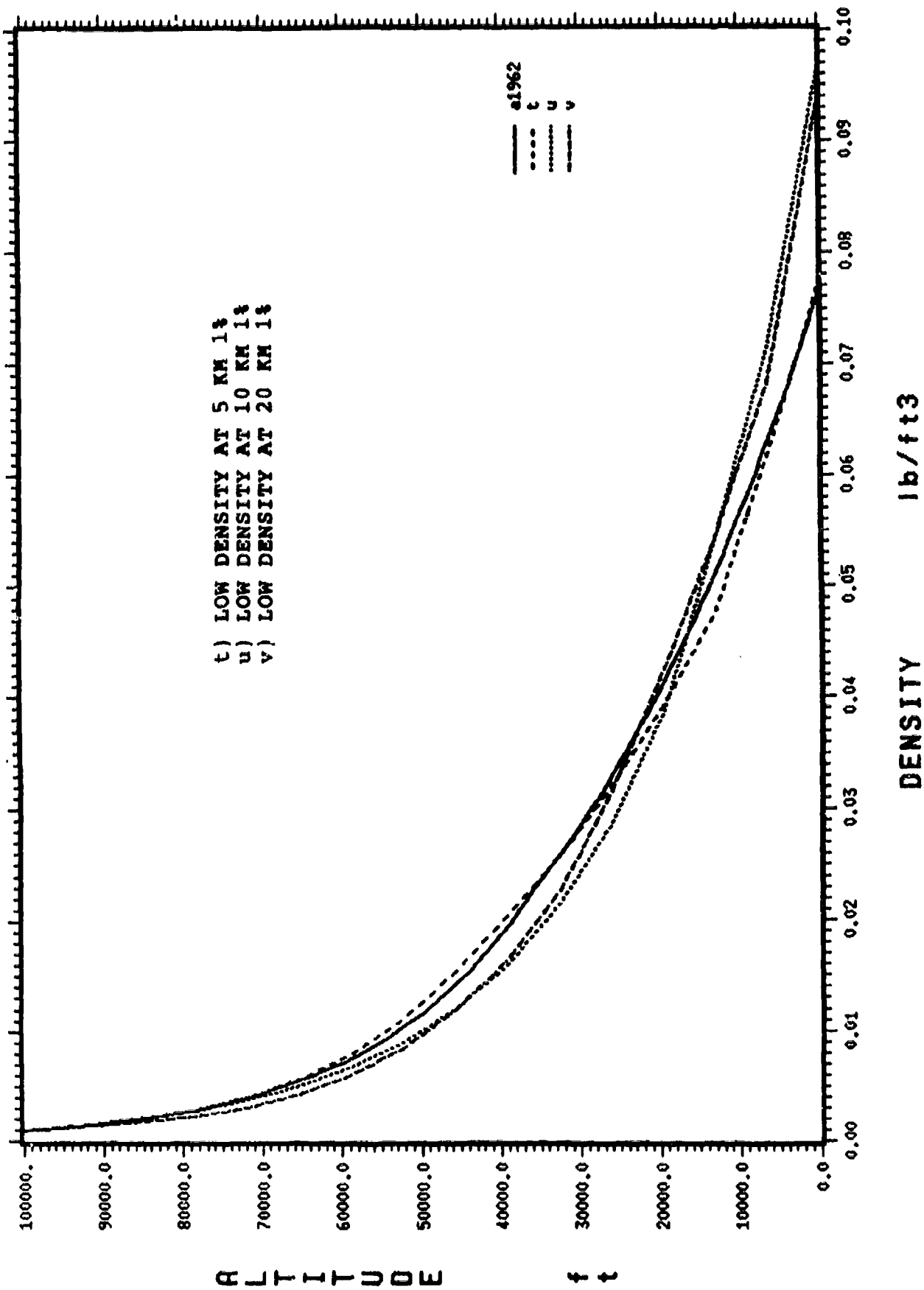
# DENSITY COMPARISON 210C



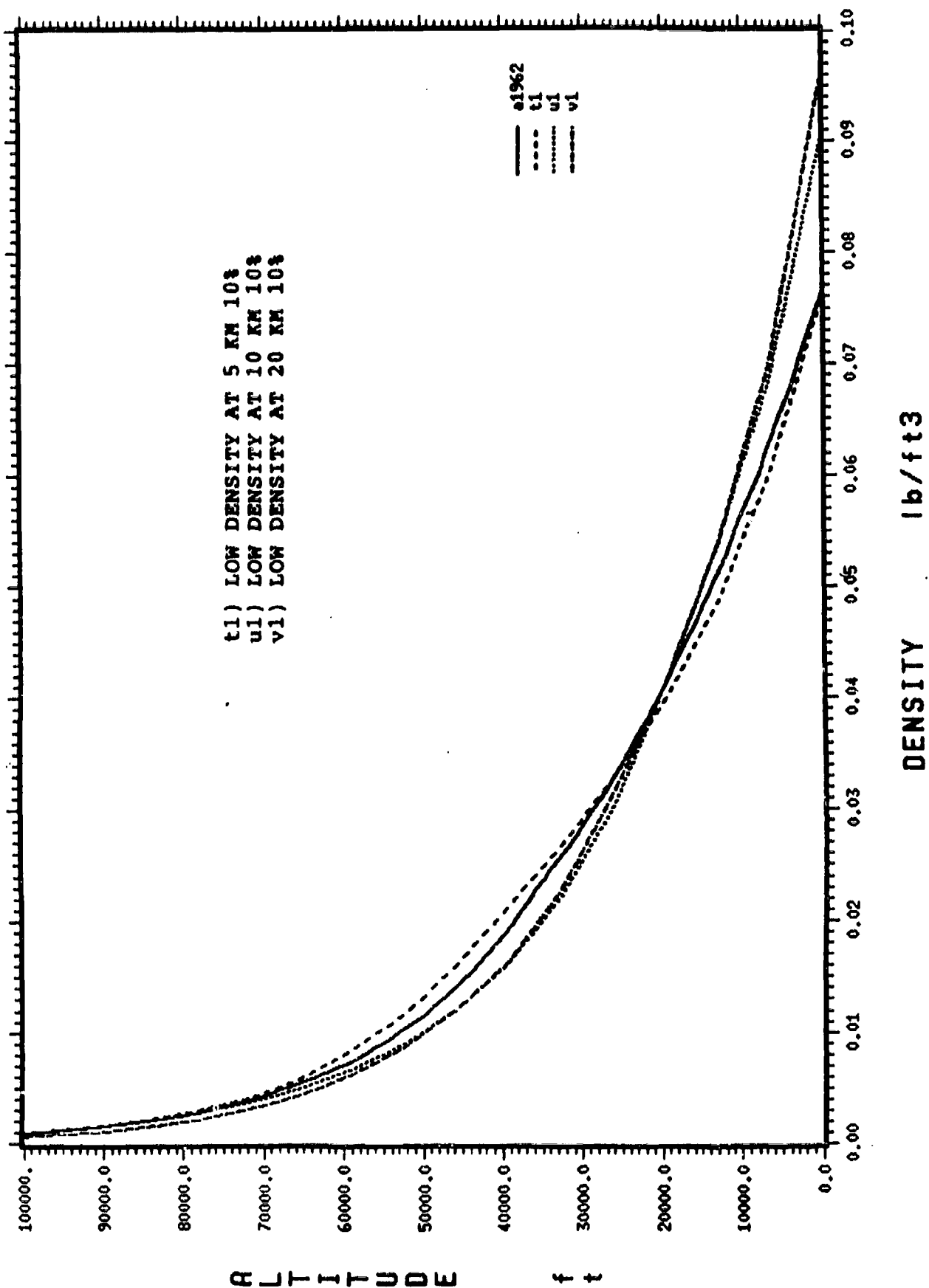
# DENSITY COMPARISON 210C



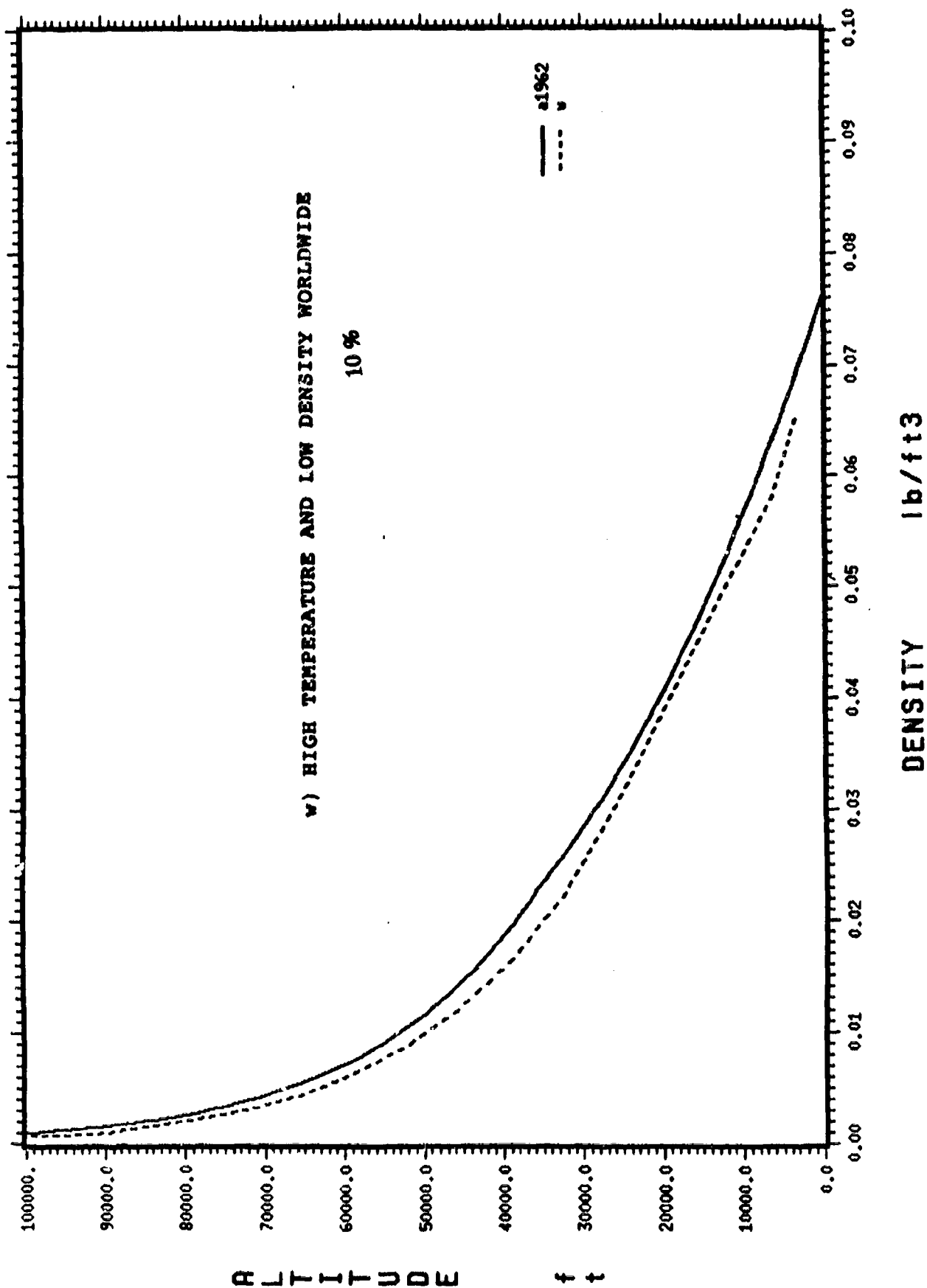
# DENSITY COMPARISON 218C



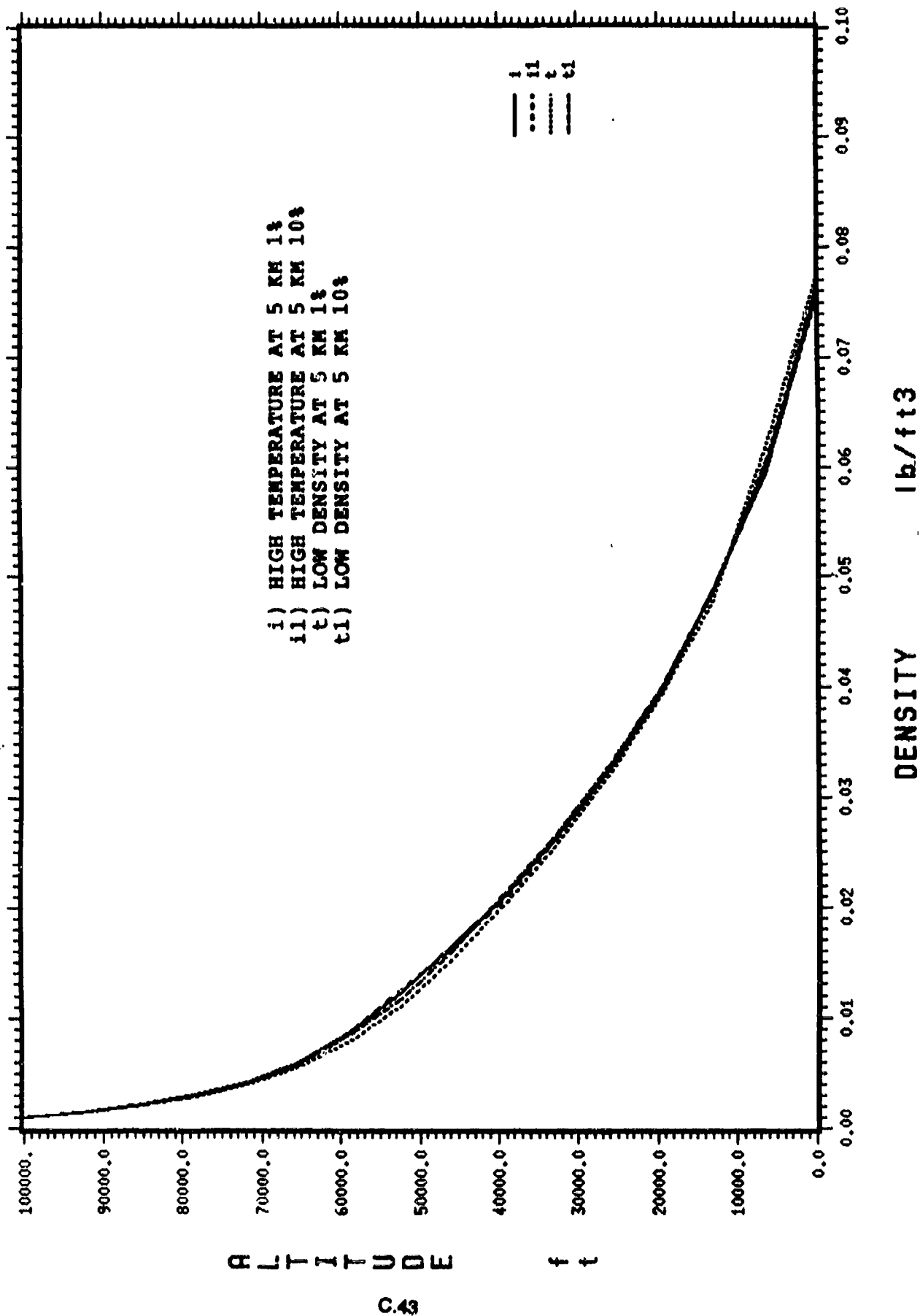
# DENSITY COMPARISON 218C



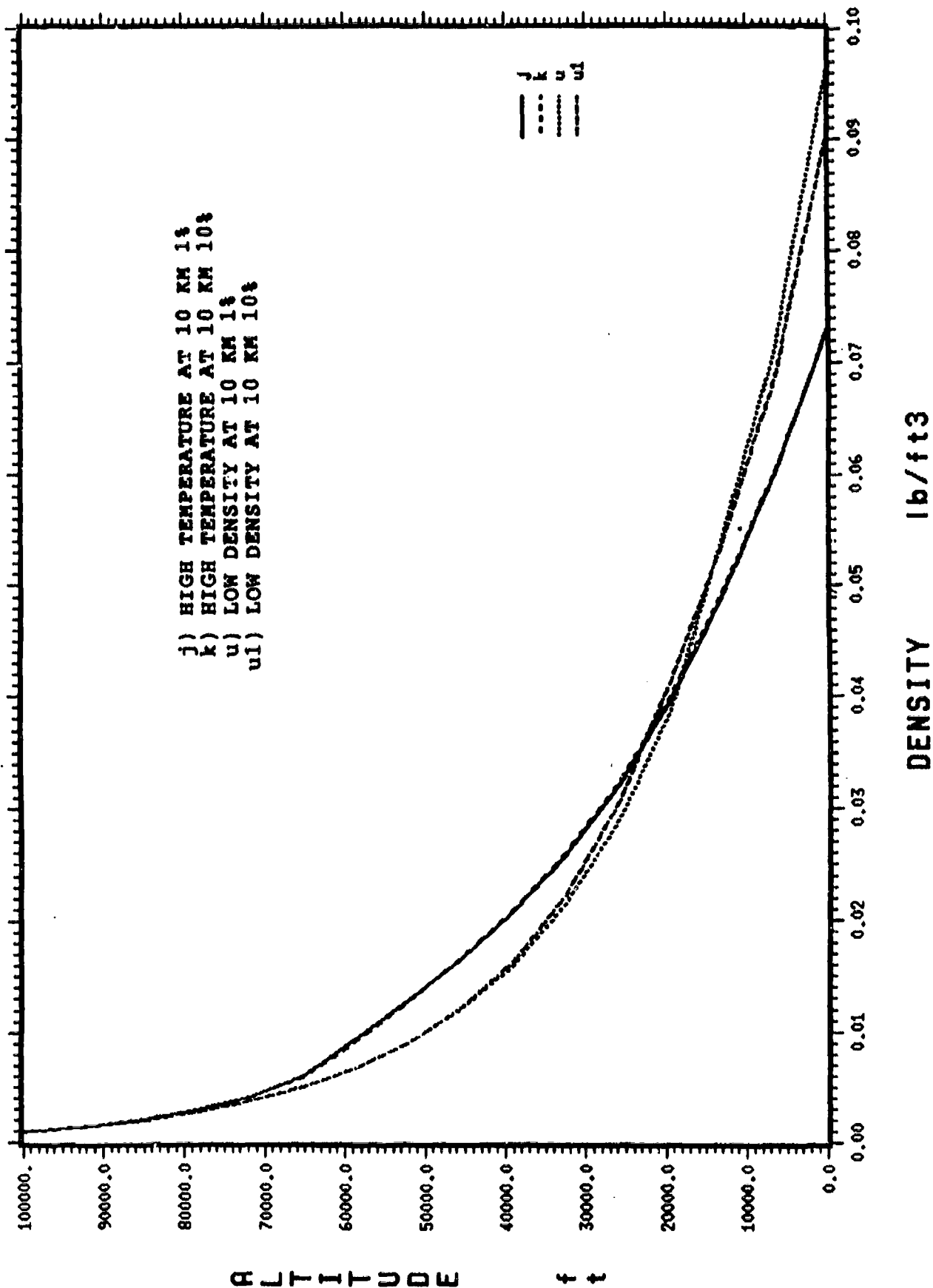
# DENSITY COMPARISON 210C



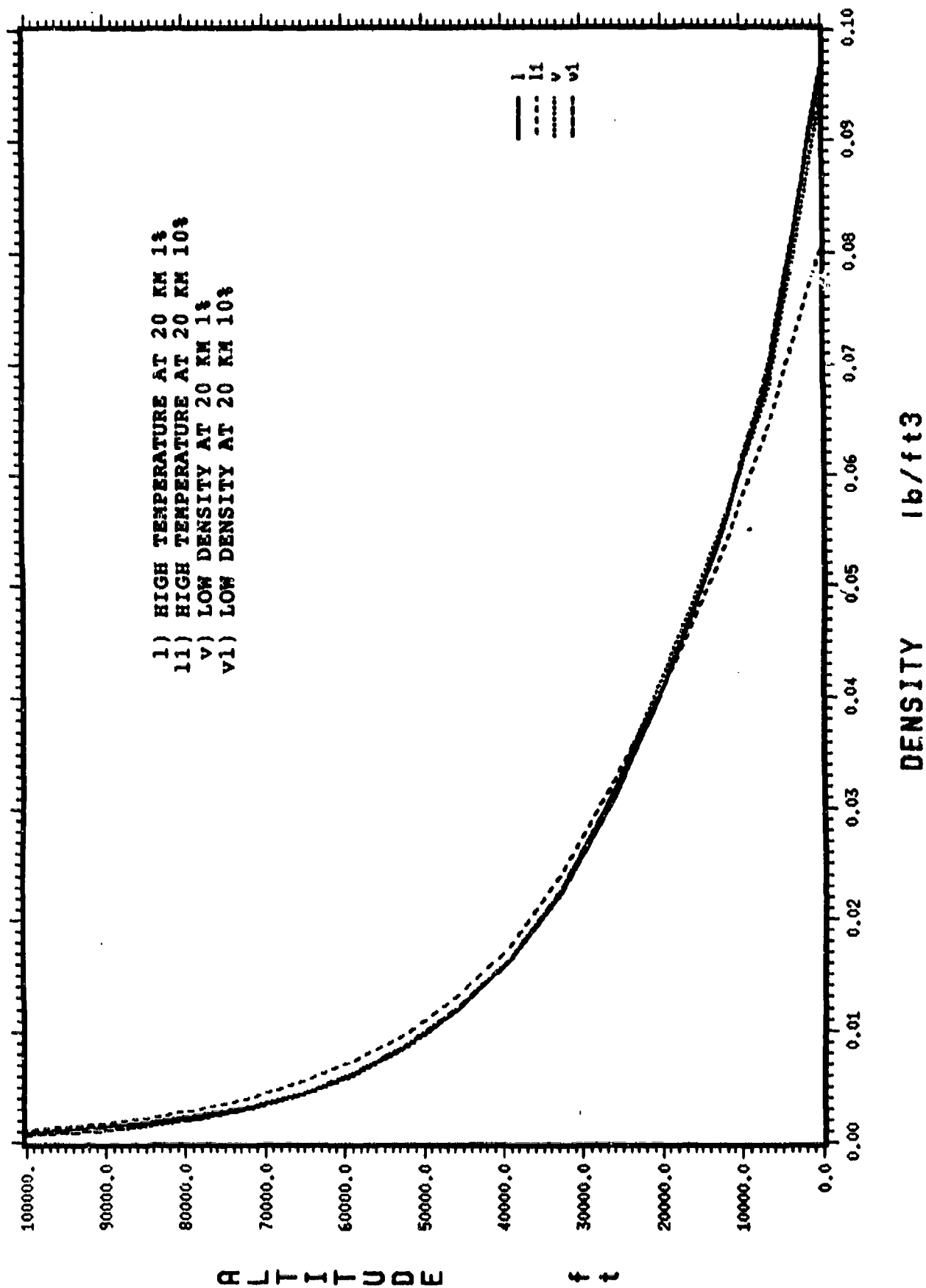
# DENSITY COMPARISON 218C



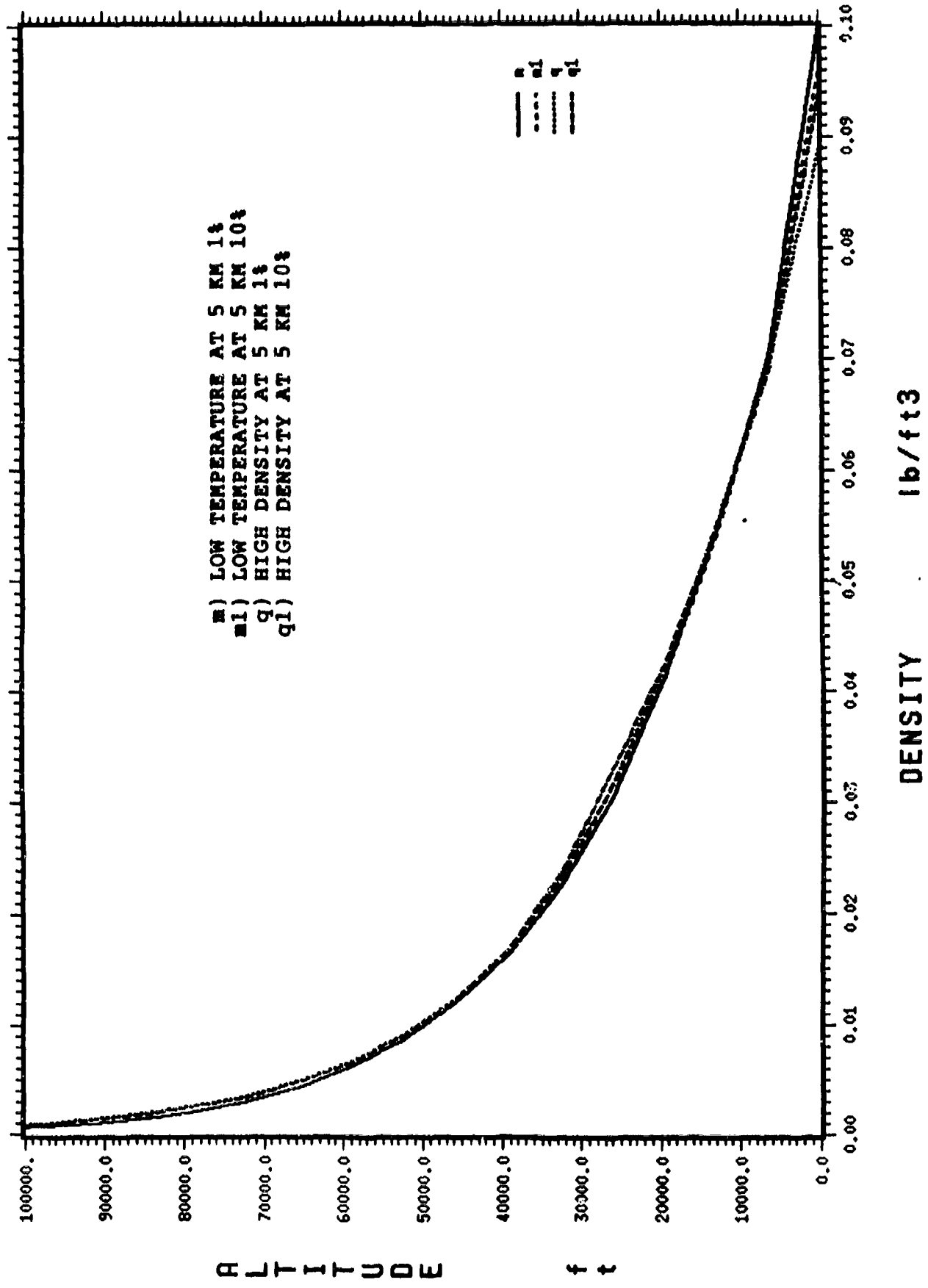
# DENSITY COMPARISON 218C



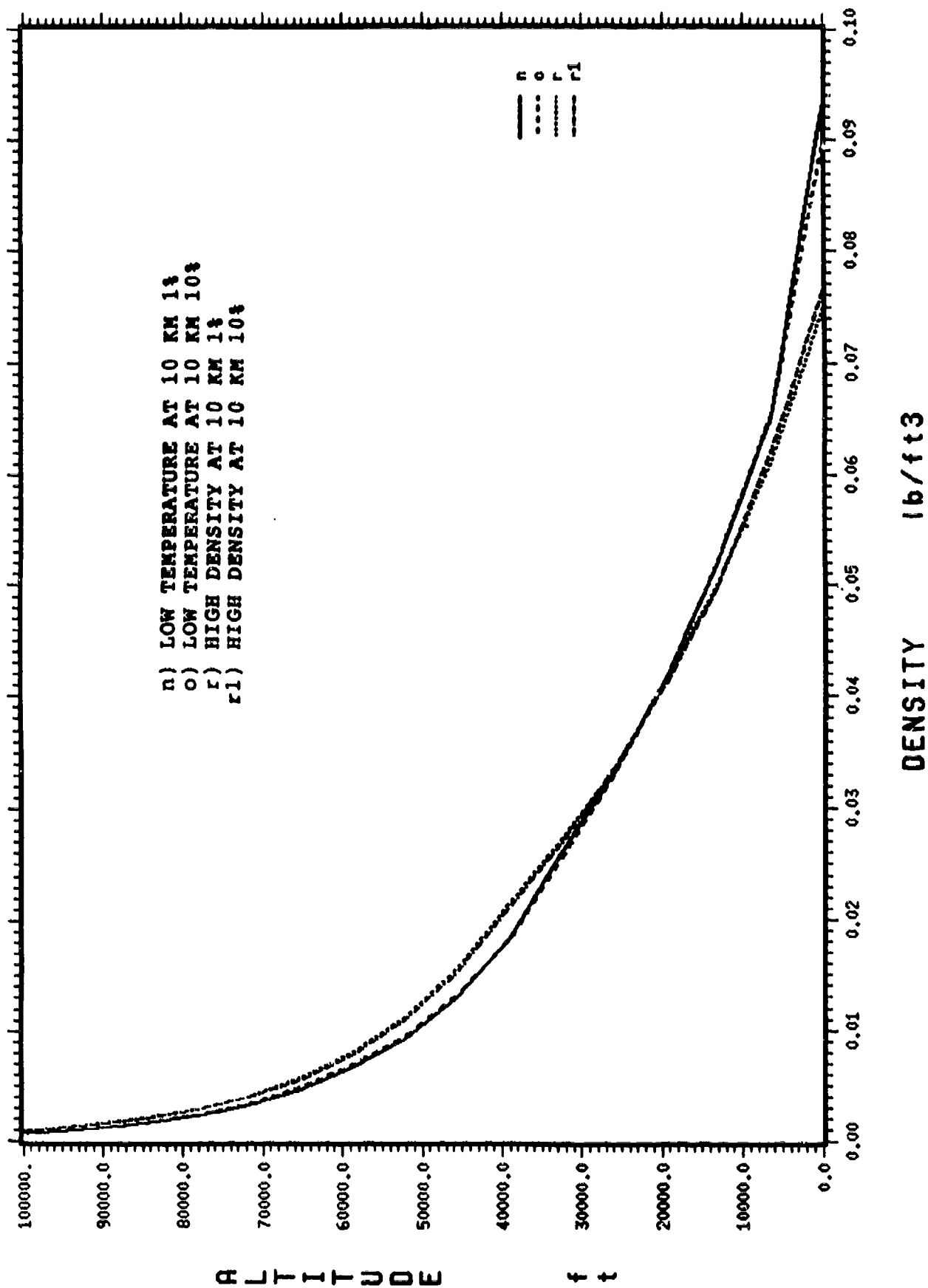
# DENSITY COMPARISON 210C



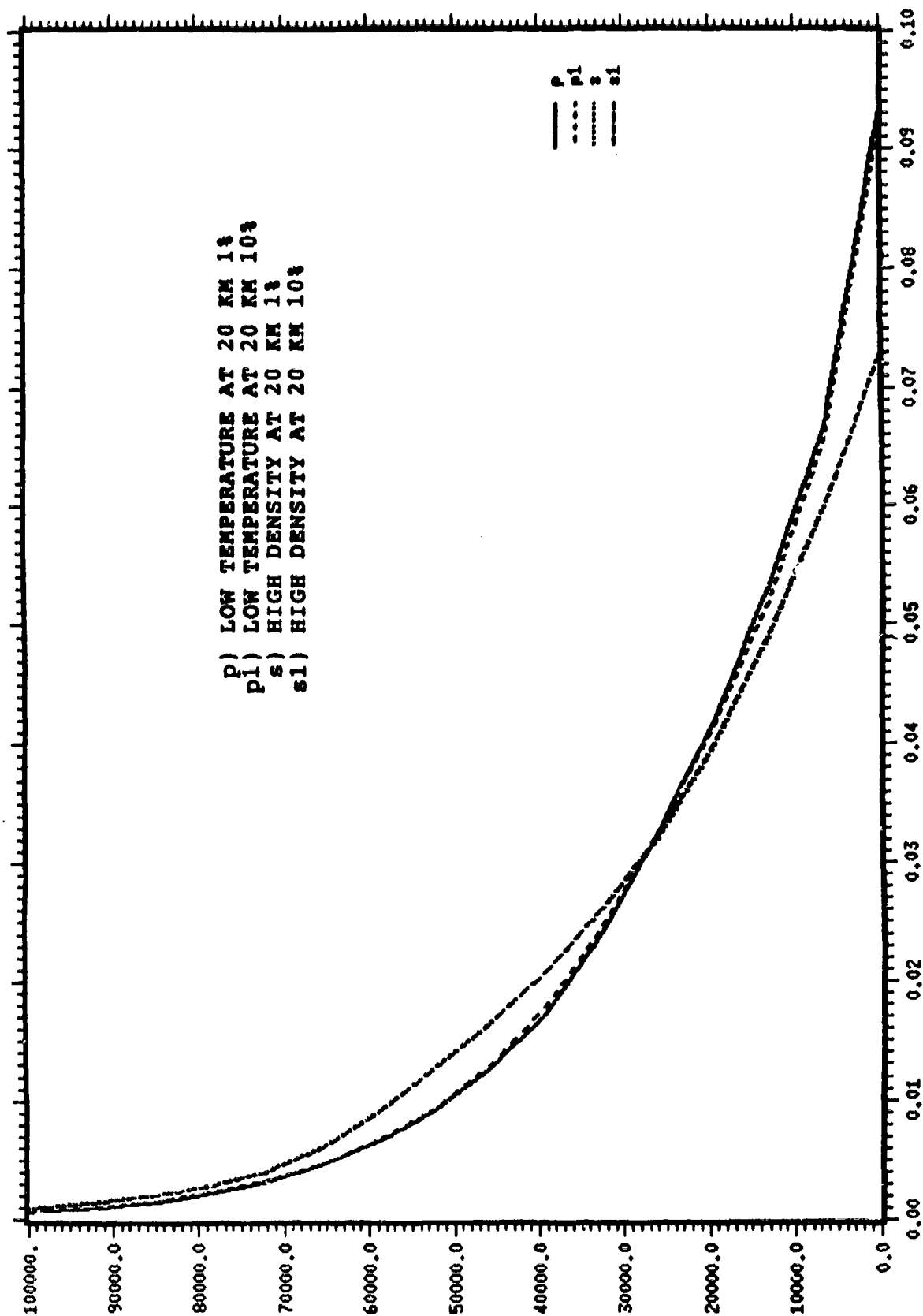
# DENSITY COMPARISON 210C



# DENSITY COMPARISON 218C



# DENSITY COMPARISON 218C



ALTITUDE

f t

DENSITY lb/ft³

**APPENDIX D.**  
**1962 U.S. STANDARD ATMOSPHERE DATA FILES**

U. S. Standard Atmosphere, 1962  
BY THE TEMPERATURE GRADIENT METHOD

Geopotential Altitude ft	Temperature °F	Pressure inHg	Density lb/ft <sup>3</sup>
0.	59.000	0.29921E+02	0.7647E-01
1000.	55.434	0.28856E+02	0.7426E-01
2000.	51.868	0.27821E+02	0.7210E-01
3000.	48.301	0.26817E+02	0.6998E-01
4000.	44.735	0.25842E+02	0.6792E-01
5000.	41.169	0.24896E+02	0.6590E-01
6000.	37.603	0.23978E+02	0.6392E-01
7000.	34.037	0.23088E+02	0.6199E-01
8000.	30.470	0.22225E+02	0.6011E-01
9000.	26.904	0.21388E+02	0.5827E-01
10000.	23.338	0.20577E+02	0.5647E-01
11000.	19.772	0.19791E+02	0.5472E-01
12000.	16.206	0.19029E+02	0.5301E-01
13000.	12.640	0.18292E+02	0.5134E-01
14000.	9.073	0.17577E+02	0.4971E-01
15000.	5.507	0.16886E+02	0.4812E-01
16000.	1.941	0.16216E+02	0.4657E-01
17000.	-1.625	0.15569E+02	0.4506E-01
18000.	-5.191	0.14942E+02	0.4358E-01
19000.	-8.758	0.14336E+02	0.4215E-01
20000.	-12.324	0.13750E+02	0.4075E-01
21000.	-15.890	0.13184E+02	0.3938E-01
22000.	-19.456	0.12636E+02	0.3805E-01
23000.	-23.022	0.12107E+02	0.3676E-01
24000.	-26.589	0.11597E+02	0.3550E-01
25000.	-30.155	0.11104E+02	0.3427E-01
26000.	-33.721	0.10627E+02	0.3307E-01
27000.	-37.287	0.10168E+02	0.3191E-01
28000.	-40.853	0.97249E+01	0.3078E-01
29000.	-44.419	0.92975E+01	0.2968E-01
30000.	-47.986	0.88854E+01	0.2861E-01
31000.	-51.552	0.84883E+01	0.2757E-01
32000.	-55.118	0.81056E+01	0.2656E-01
33000.	-58.684	0.77371E+01	0.2558E-01
34000.	-62.250	0.73822E+01	0.2462E-01
35000.	-65.817	0.70406E+01	0.2370E-01
36000.	-69.383	0.67119E+01	0.2280E-01
37000.	-69.700	0.63971E+01	0.2174E-01
38000.	-69.700	0.60969E+01	0.2072E-01
39000.	-69.700	0.58108E+01	0.1974E-01
40000.	-69.700	0.55381E+01	0.1882E-01
41000.	-69.700	0.52782E+01	0.1793E-01
42000.	-69.700	0.50305E+01	0.1709E-01
43000.	-69.700	0.47944E+01	0.1629E-01
44000.	-69.700	0.45695E+01	0.1553E-01
45000.	-69.700	0.43550E+01	0.1480E-01
46000.	-69.700	0.41507E+01	0.1410E-01
47000.	-69.700	0.39559E+01	0.1344E-01
48000.	-69.700	0.37702E+01	0.1281E-01
49000.	-69.700	0.35933E+01	0.1221E-01
50000.	-69.700	0.34247E+01	0.1164E-01
51000.	-69.700	0.32640E+01	0.1109E-01
52000.	-69.700	0.31108E+01	0.1057E-01
53000.	-69.700	0.29648E+01	0.1007E-01
54000.	-69.700	0.28257E+01	0.9601E-02
55000.	-69.700	0.26931E+01	0.9151E-02
56000.	-69.700	0.25667E+01	0.8721E-02
57000.	-69.700	0.24463E+01	0.8312E-02

58000.	-69.700	0.23315E+01	0.7922E-02
59000.	-69.700	0.22221E+01	0.7550E-02
60000.	-69.700	0.21178E+01	0.7196E-02
61000.	-69.700	0.20184E+01	0.6858E-02
62000.	-69.700	0.19237E+01	0.6536E-02
63000.	-69.700	0.18334E+01	0.6230E-02
64000.	-69.700	0.17474E+01	0.5937E-02
65000.	-69.700	0.16654E+01	0.5659E-02
66000.	-69.490	0.15872E+01	0.5393E-02
67000.	-68.941	0.15128E+01	0.5133E-02
68000.	-68.393	0.14420E+01	0.4886E-02
69000.	-67.844	0.13746E+01	0.4651E-02
70000.	-67.295	0.13105E+01	0.4427E-02
71000.	-66.747	0.12494E+01	0.4215E-02
72000.	-66.198	0.11912E+01	0.4013E-02
73000.	-65.650	0.11358E+01	0.3821E-02
74000.	-65.101	0.10831E+01	0.3639E-02
75000.	-64.552	0.10329E+01	0.3465E-02
76000.	-64.004	0.98508E+00	0.3300E-02
77000.	-63.455	0.93953E+00	0.3143E-02
78000.	-62.906	0.89615E+00	0.2994E-02
79000.	-62.358	0.85483E+00	0.2852E-02
80000.	-61.809	0.81546E+00	0.2717E-02
81000.	-61.260	0.77796E+00	0.2589E-02
82000.	-60.712	0.74224E+00	0.2466E-02
83000.	-60.163	0.70819E+00	0.2350E-02
84000.	-59.615	0.67576E+00	0.2239E-02
85000.	-59.066	0.64485E+00	0.2134E-02
86000.	-58.517	0.61539E+00	0.2034E-02
87000.	-57.969	0.58732E+00	0.1938E-02
88000.	-57.420	0.56056E+00	0.1847E-02
89000.	-56.871	0.53506E+00	0.1761E-02
90000.	-56.323	0.51075E+00	0.1679E-02
91000.	-55.774	0.48757E+00	0.1600E-02
92000.	-55.226	0.46548E+00	0.1526E-02
93000.	-54.677	0.44441E+00	0.1455E-02
94000.	-54.128	0.42433E+00	0.1387E-02
95000.	-53.580	0.40517E+00	0.1323E-02
96000.	-53.031	0.38691E+00	0.1261E-02
97000.	-52.482	0.36949E+00	0.1203E-02
98000.	-51.934	0.35288E+00	0.1147E-02
99000.	-51.385	0.33704E+00	0.1094E-02
100000.	-50.837	0.32192E+00	0.1044E-02

U. S. Standard Atmosphere, 1962  
BY THE TEMPERATURE GRADIENT METHOD

Geopotential Altitude ft	Temperature F	Pressure P/P0	Density RHO/RHO0
0.	59.000	0.10000E+01	0.1000E+01
1000.	55.434	0.96439E+00	0.9711E+00
2000.	51.868	0.92981E+00	0.9428E+00
3000.	48.301	0.89624E+00	0.9151E+00
4000.	44.735	0.86366E+00	0.8881E+00
5000.	41.169	0.83205E+00	0.8617E+00
6000.	37.603	0.80138E+00	0.8359E+00
7000.	34.037	0.77163E+00	0.8106E+00
8000.	30.470	0.74278E+00	0.7860E+00
9000.	26.904	0.71481E+00	0.7620E+00
10000.	23.338	0.68770E+00	0.7385E+00
11000.	19.772	0.66143E+00	0.7156E+00
12000.	16.206	0.63598E+00	0.6932E+00
13000.	12.640	0.61133E+00	0.6713E+00
14000.	9.073	0.58745E+00	0.6500E+00
15000.	5.507	0.56434E+00	0.6292E+00
16000.	1.941	0.54197E+00	0.6090E+00
17000.	-1.625	0.52032E+00	0.5892E+00
18000.	-5.191	0.49938E+00	0.5699E+00
19000.	-8.758	0.47913E+00	0.5511E+00
20000.	-12.324	0.45954E+00	0.5328E+00
21000.	-15.890	0.44061E+00	0.5150E+00
22000.	-19.456	0.42232E+00	0.4976E+00
23000.	-23.022	0.40464E+00	0.4807E+00
24000.	-26.589	0.38757E+00	0.4642E+00
25000.	-30.155	0.37109E+00	0.4481E+00
26000.	-33.721	0.35518E+00	0.4325E+00
27000.	-37.287	0.33983E+00	0.4173E+00
28000.	-40.853	0.32502E+00	0.4025E+00
29000.	-44.419	0.31073E+00	0.3881E+00
30000.	-47.986	0.29696E+00	0.3741E+00
31000.	-51.552	0.28369E+00	0.3605E+00
32000.	-55.118	0.27090E+00	0.3473E+00
33000.	-58.684	0.25858E+00	0.3345E+00
34000.	-62.250	0.24672E+00	0.3220E+00
35000.	-65.817	0.23530E+00	0.3099E+00
36000.	-69.383	0.22432E+00	0.2981E+00
37000.	-69.700	0.21380E+00	0.2842E+00
38000.	-69.700	0.20376E+00	0.2709E+00
39000.	-69.700	0.19420E+00	0.2582E+00
40000.	-69.700	0.18509E+00	0.2461E+00
41000.	-69.700	0.17640E+00	0.2345E+00
42000.	-69.700	0.16812E+00	0.2235E+00
43000.	-69.700	0.16024E+00	0.2130E+00
44000.	-69.700	0.15272E+00	0.2030E+00
45000.	-69.700	0.14555E+00	0.1935E+00
46000.	-69.700	0.13872E+00	0.1844E+00
47000.	-69.700	0.13221E+00	0.1758E+00
48000.	-69.700	0.12601E+00	0.1675E+00
49000.	-69.700	0.12009E+00	0.1597E+00
50000.	-69.700	0.11446E+00	0.1522E+00
51000.	-69.700	0.10909E+00	0.1450E+00
52000.	-69.700	0.10397E+00	0.1382E+00
53000.	-69.700	0.99088E-01	0.1317E+00
54000.	-69.700	0.94438E-01	0.1255E+00
55000.	-69.700	0.90006E-01	0.1197E+00
56000.	-69.700	0.85783E-01	0.1140E+00
57000.	-69.700	0.81757E-01	0.1087E+00

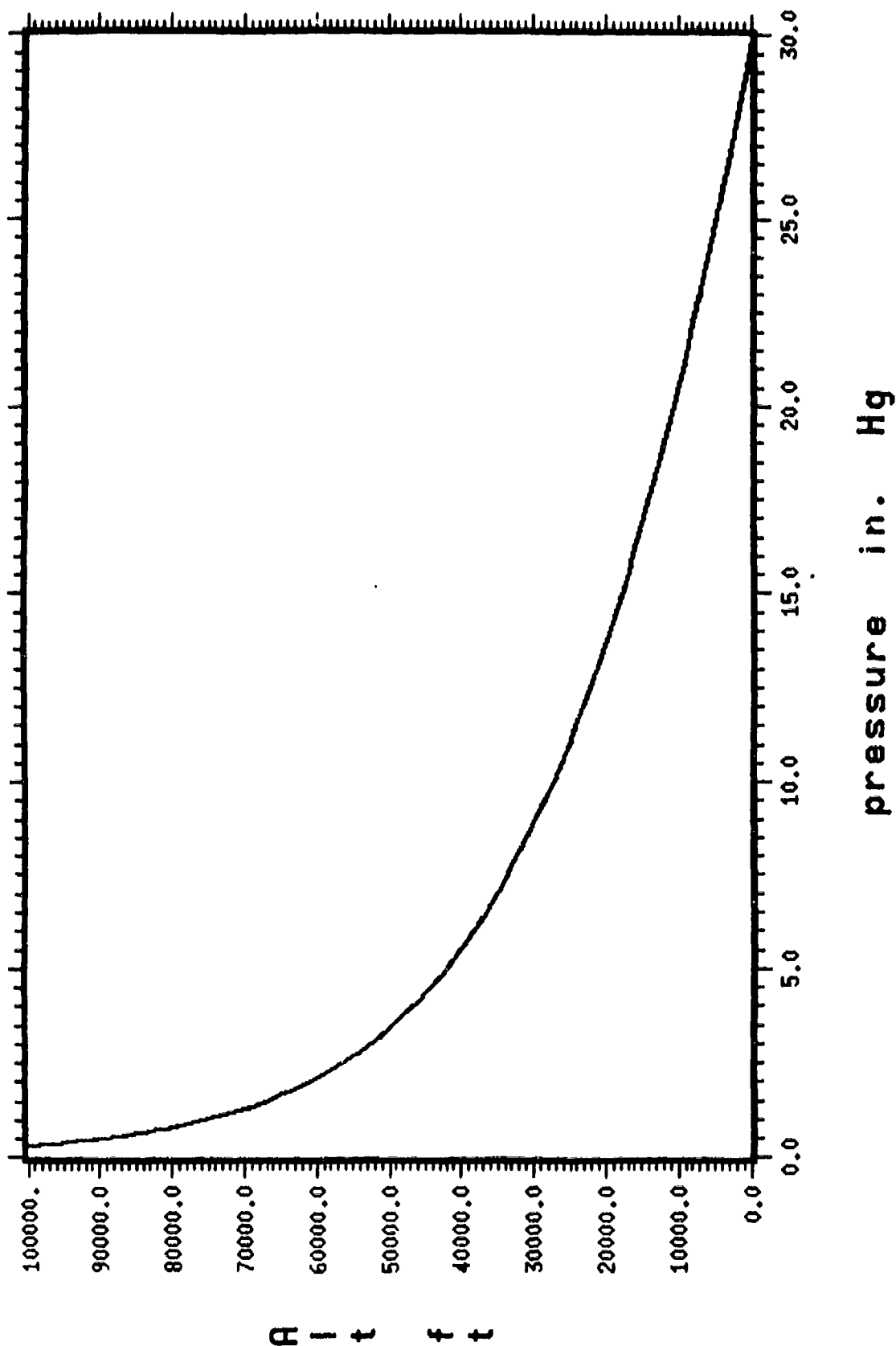
58000.	-69.700	0.77920E-01	0.1036E+00
59000.	-69.700	0.74264E-01	0.9873E-01
60000.	-69.700	0.70779E-01	0.9410E-01
61000.	-69.700	0.67458E-01	0.8968E-01
62000.	-69.700	0.64292E-01	0.8547E-01
63000.	-69.700	0.61275E-01	0.8146E-01
64000.	-69.700	0.58400E-01	0.7764E-01
65000.	-69.700	0.55659E-01	0.7400E-01
66000.	-69.490	0.53047E-01	0.7052E-01
67000.	-68.941	0.50561E-01	0.6712E-01
68000.	-68.393	0.48194E-01	0.6388E-01
69000.	-67.844	0.45942E-01	0.6081E-01
70000.	-67.295	0.43797E-01	0.5789E-01
71000.	-66.747	0.41756E-01	0.5512E-01
72000.	-66.198	0.39812E-01	0.5248E-01
73000.	-65.650	0.37961E-01	0.4997E-01
74000.	-65.101	0.36199E-01	0.4758E-01
75000.	-64.552	0.34521E-01	0.4531E-01
76000.	-64.004	0.32922E-01	0.4316E-01
77000.	-63.455	0.31400E-01	0.4110E-01
78000.	-62.906	0.29950E-01	0.3915E-01
79000.	-62.358	0.28569E-01	0.3730E-01
80000.	-61.809	0.27254E-01	0.3553E-01
81000.	-61.260	0.26000E-01	0.3385E-01
82000.	-60.712	0.24806E-01	0.3225E-01
83000.	-60.163	0.23669E-01	0.3073E-01
84000.	-59.615	0.22584E-01	0.2928E-01
85000.	-59.066	0.21552E-01	0.2790E-01
86000.	-58.517	0.20567E-01	0.2659E-01
87000.	-57.969	0.19629E-01	0.2534E-01
88000.	-57.420	0.18735E-01	0.2416E-01
89000.	-56.871	0.17882E-01	0.2303E-01
90000.	-56.323	0.17070E-01	0.2195E-01
91000.	-55.774	0.16295E-01	0.2093E-01
92000.	-55.226	0.15557E-01	0.1995E-01
93000.	-54.677	0.14853E-01	0.1902E-01
94000.	-54.128	0.14181E-01	0.1814E-01
95000.	-53.580	0.13541E-01	0.1730E-01
96000.	-53.031	0.12931E-01	0.1649E-01
97000.	-52.482	0.12349E-01	0.1573E-01
98000.	-51.934	0.11794E-01	0.1500E-01
99000.	-51.385	0.11264E-01	0.1431E-01
100000.	-50.837	0.10759E-01	0.1365E-01

1962 U.S. STANDARD ATMOSPHERE BY THE METHOD OF  
TRUNCATED CHEBYSHEV EXPANSION

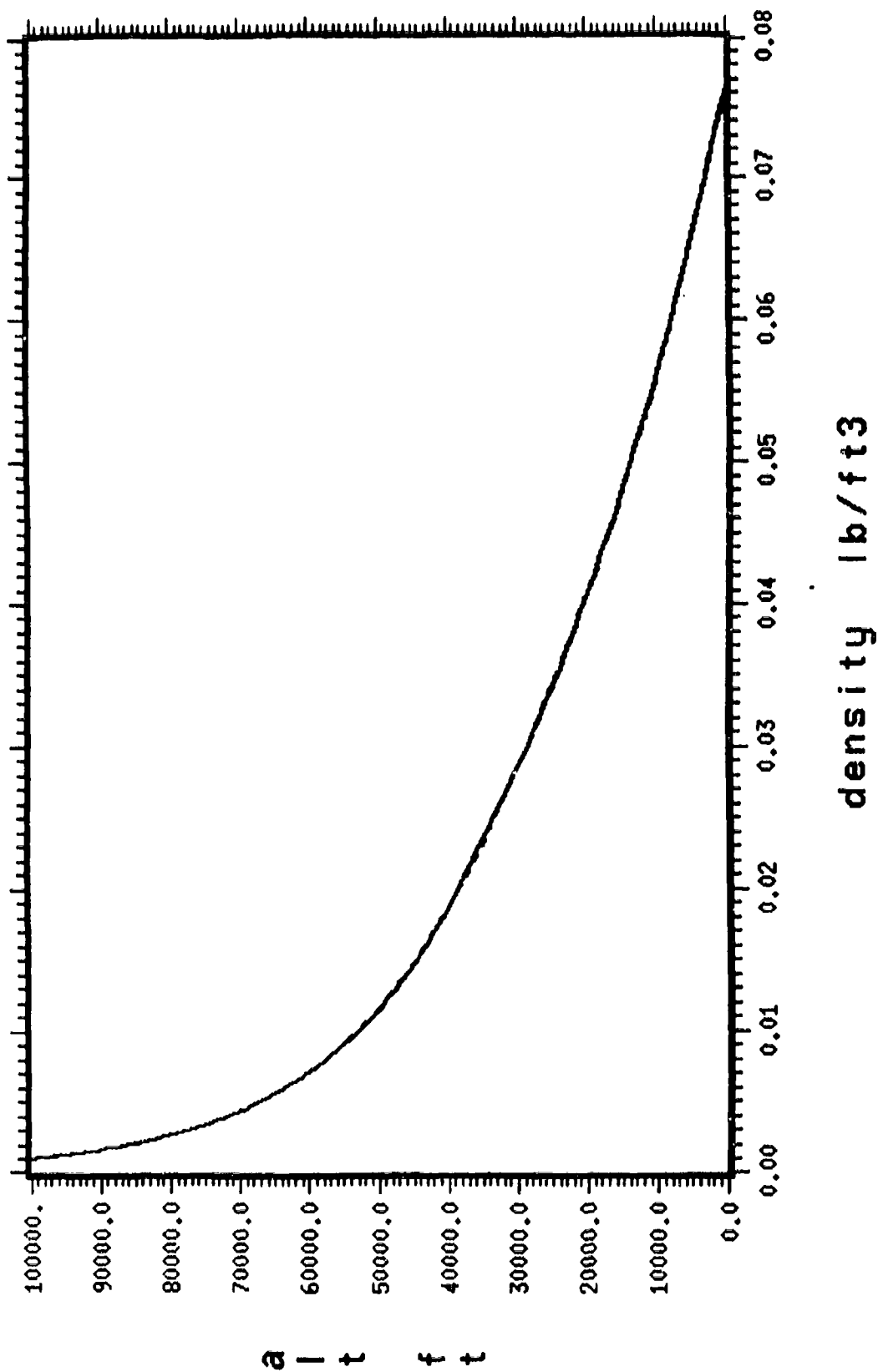
ALT ft	TEMP F	delt	PRESSURE		DENSITY	
			in. Hg	err	lb/ft <sup>3</sup>	err
0.	60.480999	-1.481	29.927000	-0.019%	0.076270	0.267%
1000.	55.033001	0.401	28.858000	-0.008%	0.074320	-0.079%
2000.	50.550999	1.317	27.819000	0.007%	0.072280	-0.252%
3000.	46.743999	1.558	26.811001	0.021%	0.070180	-0.281%
4000.	43.381001	1.354	25.833000	0.034%	0.068080	-0.241%
5000.	40.284000	0.885	24.886000	0.040%	0.065990	-0.143%
6000.	37.313999	0.289	23.969000	0.038%	0.063930	-0.013%
7000.	34.367001	-0.330	23.080000	0.035%	0.061930	0.102%
8000.	31.368000	-0.897	22.219000	0.027%	0.059980	0.216%
9000.	28.264999	-1.360	21.386000	0.010%	0.058100	0.293%
10000.	25.027000	-1.689	20.577999	-0.005%	0.056280	0.345%
11000.	21.636999	-1.865	19.795000	-0.021%	0.054520	0.367%
12000.	18.094000	-1.888	19.037001	-0.040%	0.052820	0.358%
13000.	14.405000	-1.765	18.302000	-0.056%	0.051180	0.312%
14000.	10.582000	-1.508	17.589001	-0.066%	0.049580	0.262%
15000.	6.650000	-1.142	16.899000	-0.078%	0.048040	0.166%
16000.	2.630000	-0.689	16.230000	-0.084%	0.046540	0.064%
17000.	-1.450000	-0.175	15.582000	-0.085%	0.045080	-0.049%
18000.	-5.563000	0.372	14.955000	-0.086%	0.043660	-0.174%
19000.	-9.681000	0.924	14.347000	-0.076%	0.042260	-0.268%
20000.	-13.777000	1.454	13.758000	-0.057%	0.040900	-0.378%
21000.	-17.826000	1.937	13.189000	-0.040%	0.039570	-0.477%
22000.	-21.805000	2.349	12.639000	-0.021%	0.038260	-0.547%
23000.	-25.691999	2.670	12.106000	0.012%	0.036980	-0.604%
24000.	-29.466999	2.879	11.592000	0.041%	0.035720	-0.628%
25000.	-33.116001	2.962	11.096000	0.068%	0.034480	-0.613%
26000.	-36.622002	2.902	10.616000	0.108%	0.033270	-0.590%
27000.	-39.973000	2.687	10.154000	0.139%	0.032070	-0.495%
28000.	-43.160999	2.309	9.709200	0.162%	0.030900	-0.387%
29000.	-46.180000	1.761	9.280400	0.184%	0.029750	-0.232%
30000.	-49.021000	1.036	8.867800	0.199%	0.028630	-0.066%
31000.	-51.683998	0.133	8.470900	0.205%	0.027520	0.185%
32000.	-54.165001	-0.952	8.089500	0.199%	0.026450	0.418%
33000.	-56.465000	-2.218	7.723200	0.179%	0.025390	0.735%
34000.	-58.584999	-3.664	7.371600	0.143%	0.024360	1.072%
35000.	-60.528000	-5.288	7.034400	0.088%	0.023360	1.422%
36000.	-62.297001	-7.085	6.711100	0.013%	0.022390	1.790%
37000.	-63.897999	-5.802	6.401400	-0.069%	0.021440	1.407%
38000.	-65.333000	-4.367	6.104900	-0.133%	0.020520	0.989%
39000.	-66.612000	-3.088	5.821200	-0.181%	0.019630	0.623%
40000.	-67.737999	-1.962	5.549800	-0.213%	0.018770	0.297%
41000.	-68.720001	-0.980	5.290400	-0.232%	0.017940	0.011%
42000.	-69.566002	-0.134	5.042500	-0.240%	0.017140	-0.234%
43000.	-70.281998	0.582	4.805800	-0.238%	0.016360	-0.380%
44000.	-70.875999	1.176	4.579800	-0.227%	0.015620	-0.560%
45000.	-71.356003	1.656	4.364100	-0.209%	0.014900	-0.648%
46000.	-71.731003	2.031	4.158300	-0.185%	0.014210	-0.716%
47000.	-72.007004	2.307	3.962100	-0.158%	0.013550	-0.766%
48000.	-72.193001	2.493	3.775000	-0.127%	0.012910	-0.733%
49000.	-72.296997	2.597	3.596600	-0.092%	0.012310	-0.778%
50000.	-72.324997	2.625	3.426700	-0.060%	0.011730	-0.756%
51000.	-72.285004	2.585	3.264700	-0.023%	0.011170	-0.676%
52000.	-72.183998	2.484	3.110500	0.009%	0.010640	-0.615%
53000.	-72.028000	2.328	2.963600	0.041%	0.010130	-0.516%
54000.	-71.824997	2.125	2.823600	0.074%	0.009651	-0.474%
55000.	-71.578003	1.878	2.690400	0.100%	0.009190	-0.386%
56000.	-71.295998	1.596	2.563500	0.125%	0.008750	-0.285%

57000.	-70.983002	1.283	2.442800	0.141%	0.008331	-0.184%
58000.	-70.643997	0.944	2.327800	0.157%	0.007932	-0.083%
59000.	-70.281998	0.582	2.218300	0.169%	0.007552	0.020%
60000.	-69.903999	0.204	2.114000	0.178%	0.007190	0.126%
61000.	-69.511002	-0.189	2.014800	0.178%	0.006846	0.222%
62000.	-69.108002	-0.592	1.920300	0.176%	0.006518	0.326%
63000.	-68.696999	-1.003	1.830400	0.164%	0.006206	0.424%
64000.	-68.281998	-1.418	1.744700	0.153%	0.005909	0.520%
65000.	-67.864998	-1.835	1.663200	0.130%	0.005627	0.604%
66000.	-67.445999	-2.044	1.585600	0.103%	0.005359	0.623%
67000.	-67.028000	-1.913	1.511600	0.082%	0.005104	0.559%
68000.	-66.612999	-1.779	1.441200	0.058%	0.004861	0.504%
69000.	-66.199997	-1.644	1.374200	0.031%	0.004630	0.445%
70000.	-65.791000	-1.504	1.310300	0.012%	0.004410	0.393%
71000.	-65.386002	-1.361	1.249500	-0.010%	0.004201	0.335%
72000.	-64.985001	-1.204	1.191500	-0.023%	0.004002	0.282%
73000.	-64.585999	-1.063	1.136300	-0.040%	0.003813	0.220%
74000.	-64.192001	-0.909	1.083700	-0.054%	0.003633	0.162%
75000.	-63.799999	-0.752	1.033600	-0.068%	0.003461	0.127%
76000.	-63.410000	-0.593	0.985840	-0.078%	0.003298	0.073%
77000.	-63.020000	-0.435	0.940340	-0.086%	0.003143	0.013%
78000.	-62.630001	-0.276	0.896980	-0.093%	0.002995	-0.027%
79000.	-62.237999	-0.119	0.855660	-0.098%	0.002854	-0.067%
80000.	-61.842999	0.034	0.816280	-0.100%	0.002720	-0.107%
81000.	-61.443001	0.183	0.778750	-0.101%	0.002592	-0.135%
82000.	-61.036999	0.325	0.742980	-0.101%	0.002471	-0.191%
83000.	-60.622002	0.459	0.708880	-0.097%	0.002355	-0.217%
84000.	-60.196999	0.583	0.676380	-0.092%	0.002245	-0.259%
85000.	-59.761002	0.695	0.645400	-0.086%	0.002139	-0.239%
86000.	-59.311001	0.794	0.615870	-0.078%	0.002039	-0.266%
87000.	-58.846001	0.870	0.587720	-0.069%	0.001944	-0.299%
88000.	-58.363998	0.944	0.560890	-0.059%	0.001853	-0.303%
89000.	-57.862999	0.992	0.535310	-0.047%	0.001766	-0.290%
90000.	-57.340000	1.018	0.510920	-0.034%	0.001683	-0.262%
91000.	-56.794998	1.021	0.487680	-0.023%	0.001605	-0.294%
92000.	-56.226002	1.001	0.465520	-0.010%	0.001530	-0.282%
93000.	-55.631001	0.955	0.444400	0.002%	0.001458	-0.227%
94000.	-55.007999	0.880	0.424260	0.015%	0.001390	-0.216%
95000.	-54.355000	0.776	0.405060	0.028%	0.001325	-0.181%
96000.	-53.672001	0.641	0.386760	0.038%	0.001263	-0.135%
97000.	-52.957001	0.475	0.369320	0.046%	0.001204	-0.091%
98000.	-52.209000	0.276	0.352690	0.054%	0.001147	0.026%
99000.	-51.424999	0.040	0.336840	0.058%	0.001094	0.027%
100000.	-50.605999	-0.230	0.321730	0.060%	0.001043	0.077%

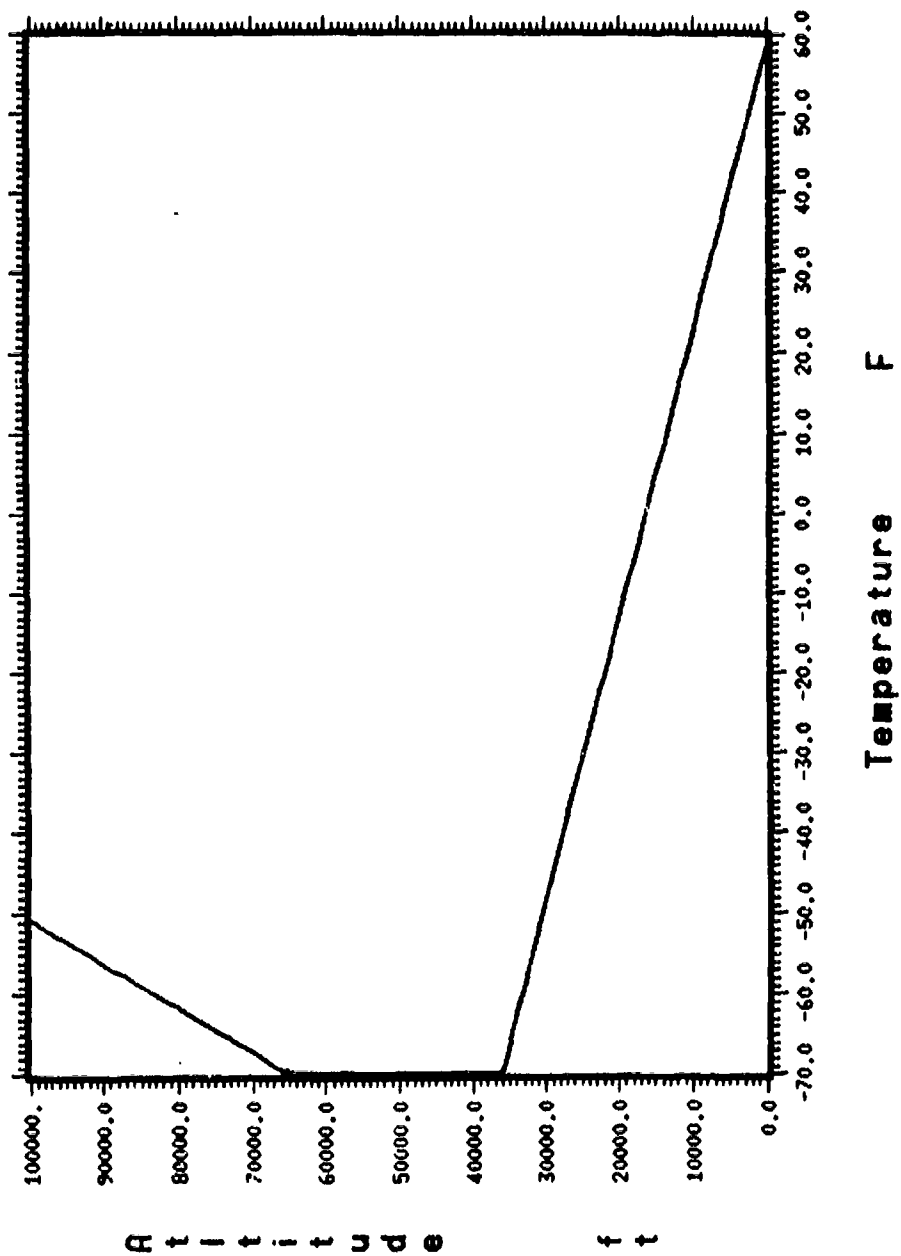
**PRESSURE COMPARISON**  
**1962 Std. Atm. by Analytical and Estimated Methods**

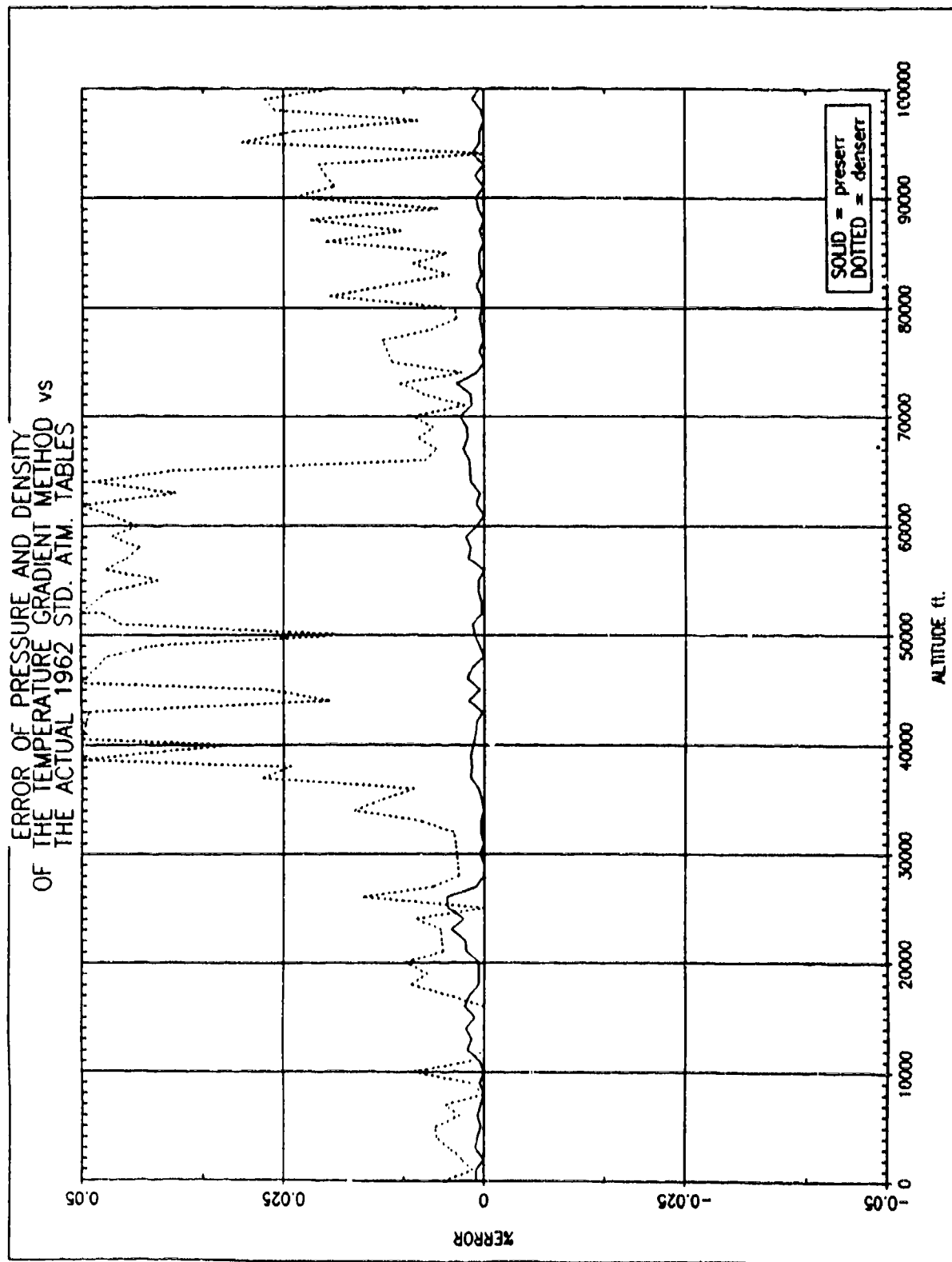


DENSITY COMPARISON  
1962 Std. Atm. by Analytical and Estimated Methods

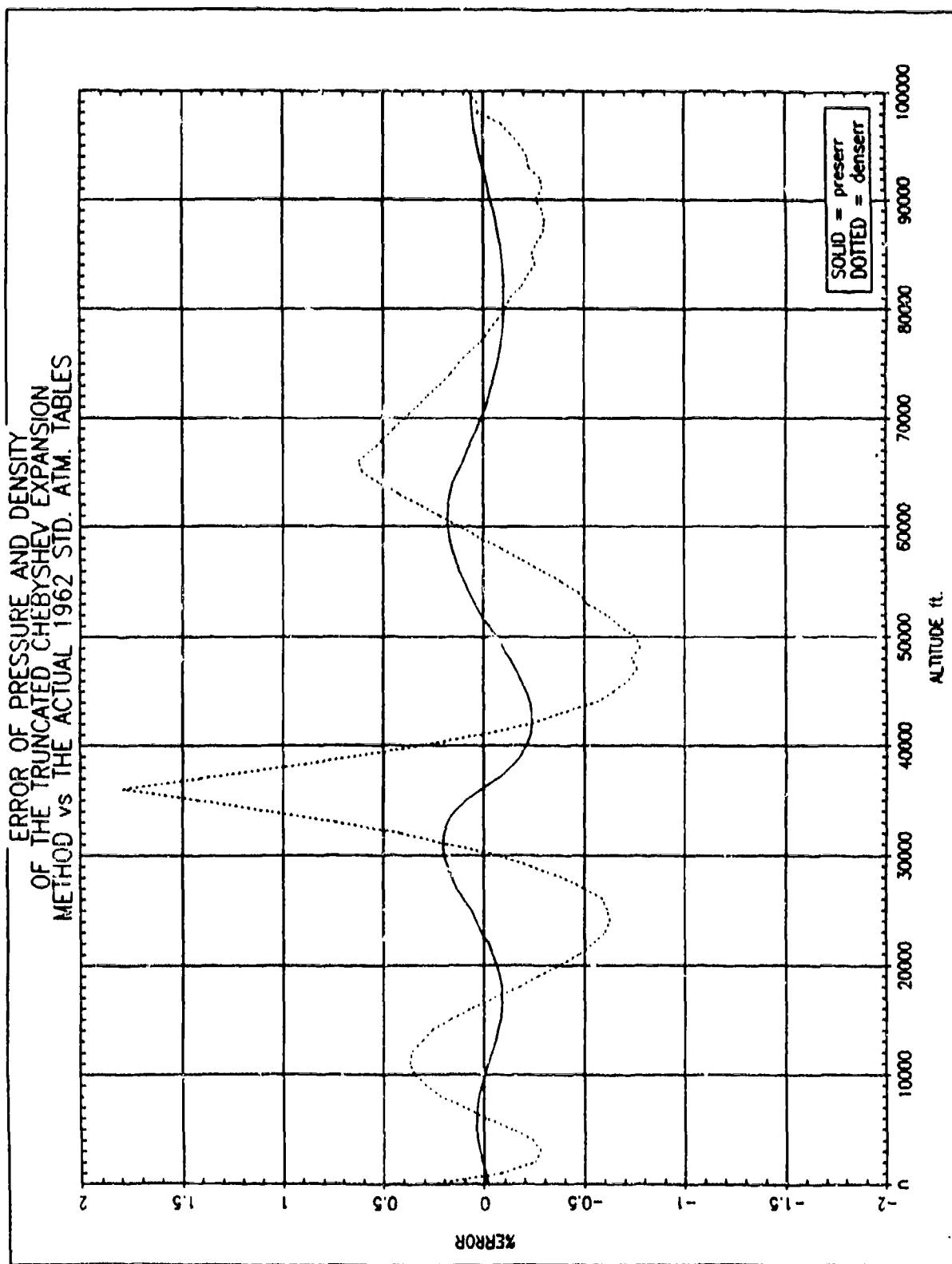


# Temperature vs alt for 1962





ERROR OF PRESSURE AND DENSITY  
OF THE TRUNCATED CHEBYSHEV EXPANSION  
METHOD vs THE ACTUAL 1962 STD. ATM. TABLES



**APPENDIX E.**  
**1966 U.S. STANDARD ATMOSPHERE DATA FILES**

U.S. STANDARD ATMOSPHERE 15 N.L.  
ANNUAL 1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	84.99	29.920000	0.072801
1000.	81.31	28.906851	0.070814
2000.	77.64	27.921415	0.068868
3000.	73.96	26.963184	0.066963
4000.	70.35	26.023930	0.065071
5000.	66.75	25.118759	0.063236
6000.	63.16	24.239208	0.061442
7000.	59.58	23.378565	0.059668
8000.	58.25	22.549698	0.057701
9000.	55.23	21.745342	0.055969
10000.	51.43	20.966974	0.054366
11000.	47.64	20.210968	0.052798
12000.	43.84	19.476847	0.051264
13000.	40.04	18.764132	0.049763
14000.	36.29	18.065958	0.048274
15000.	32.55	17.394999	0.046835
16000.	28.80	16.744116	0.045428
17000.	25.06	16.112869	0.044053
18000.	21.32	15.500788	0.042710
19000.	17.57	14.907453	0.041397
20000.	13.84	14.322530	0.040086
21000.	10.12	13.765786	0.038833
22000.	6.40	13.226517	0.037609
23000.	2.69	12.701220	0.036405
24000.	-1.02	12.195800	0.035239
25000.	-4.73	11.703555	0.034093
26000.	-8.45	11.231946	0.032989
27000.	-12.14	10.771281	0.031897
28000.	-15.83	10.328691	0.030841
29000.	-19.52	9.898372	0.029803
30000.	-23.21	9.484957	0.028800
31000.	-26.90	9.085517	0.027822
32000.	-30.59	8.699695	0.026870
33000.	-34.27	8.327133	0.025942
34000.	-37.96	7.967487	0.025039
35000.	-41.65	7.620420	0.024160
36000.	-45.34	7.285597	0.023304
37000.	-49.02	6.958807	0.022458
38000.	-52.70	6.647673	0.021647
39000.	-56.37	6.347815	0.020859
40000.	-60.05	6.058918	0.020093
41000.	-63.72	5.780683	0.019348
42000.	-67.40	5.512807	0.018625
43000.	-71.07	5.254993	0.017922
44000.	-74.75	5.006961	0.017239
45000.	-78.43	4.768420	0.016576
46000.	-82.10	4.539098	0.015932
47000.	-85.78	4.318721	0.015308
48000.	-89.45	4.107023	0.014702
49000.	-93.13	3.903744	0.014114
50000.	-96.81	3.708628	0.013545
51000.	-100.48	3.521425	0.012993
52000.	-104.16	3.341893	0.012458
53000.	-107.83	3.169787	0.011940
54000.	-111.51	3.004877	0.011438
55000.	-115.10	2.841375	0.010972
56000.	-117.91	2.693825	0.010549
57000.	-120.71	2.554784	0.010149

58000.	-103.52	2.423714	0.009019
59000.	-101.32	2.300113	0.008506
60000.	-99.13	2.183511	0.008026
61000.	-96.93	2.073477	0.007575
62000.	-94.74	1.969601	0.007153
63000.	-92.54	1.871505	0.006756
64000.	-90.35	1.778835	0.006383
65000.	-88.15	1.691265	0.006033
66000.	-85.96	1.608483	0.005704
67000.	-83.77	1.530203	0.005395
68000.	-81.57	1.456154	0.005104
69000.	-79.38	1.386088	0.004830
70000.	-77.18	1.319766	0.004573
71000.	-74.99	1.256972	0.004330
72000.	-72.79	1.197497	0.004102
73000.	-71.41	1.138676	0.003887
74000.	-70.20	1.085216	0.003693
75000.	-69.00	1.034420	0.003509
76000.	-67.79	0.986146	0.003335
77000.	-66.58	0.940263	0.003170
78000.	-65.37	0.896647	0.003014
79000.	-64.17	0.855177	0.002866
80000.	-62.96	0.815744	0.002725
81000.	-61.75	0.778240	0.002592
82000.	-60.55	0.742567	0.002466
83000.	-59.34	0.708629	0.002346
84000.	-58.13	0.676337	0.002232
85000.	-56.93	0.645607	0.002124
86000.	-55.72	0.616360	0.002022
87000.	-54.51	0.588518	0.001925
88000.	-53.30	0.562012	0.001833
89000.	-52.10	0.536772	0.001745
90000.	-50.89	0.512736	0.001662
91000.	-49.68	0.489842	0.001583
92000.	-48.48	0.468034	0.001508
93000.	-47.27	0.447256	0.001437
94000.	-46.06	0.427457	0.001370
95000.	-44.86	0.408589	0.001305
96000.	-43.65	0.390604	0.001244
97000.	-42.44	0.373460	0.001186
98000.	-41.23	0.357115	0.001131
99000.	-40.03	0.341529	0.001079
100000.	-38.82	0.326665	0.001029

U.S. STANDARD ATMOSPHERE 30 N.L. JANUARY  
1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	59.66	30.150000	0.076960
1000.	57.83	29.080864	0.074493
2000.	56.01	28.046022	0.072097
3000.	54.18	27.044561	0.069769
4000.	52.35	26.075462	0.067509
5000.	50.53	25.137831	0.065315
6000.	48.70	24.230700	0.063184
7000.	46.05	23.346041	0.061197
8000.	42.34	22.494686	0.059401
9000.	38.63	21.668419	0.057645
10000.	34.93	20.862247	0.055915
11000.	31.26	20.084661	0.054233
12000.	27.60	19.330561	0.052589
13000.	23.93	18.599392	0.050984
14000.	20.27	17.888187	0.049408
15000.	16.66	17.201445	0.047871
16000.	13.06	16.536160	0.046371
17000.	9.45	15.891788	0.044907
18000.	5.84	15.267842	0.043478
19000.	2.25	14.660899	0.042074
20000.	-1.33	14.076478	0.040712
21000.	-4.91	13.511046	0.039385
22000.	-8.50	12.964115	0.038091
23000.	-12.08	12.435223	0.036830
24000.	-15.67	11.923916	0.035600
25000.	-19.25	11.429737	0.034403
26000.	-22.84	10.952257	0.033236
27000.	-26.42	10.491033	0.032100
28000.	-30.00	10.037955	0.030970
29000.	-33.57	9.608314	0.029892
30000.	-37.15	9.193673	0.028844
31000.	-40.72	8.793638	0.027824
32000.	-44.29	8.407803	0.026832
33000.	-47.86	8.035787	0.025867
34000.	-51.43	7.677200	0.024929
35000.	-55.00	7.331677	0.024017
36000.	-58.57	6.998846	0.023131
37000.	-62.14	6.678351	0.022270
38000.	-65.71	6.369837	0.021434
39000.	-69.28	6.072958	0.020622
40000.	-71.50	5.783904	0.019753
41000.	-72.93	5.511132	0.018890
42000.	-74.36	5.250291	0.018063
43000.	-75.78	5.000891	0.017269
44000.	-77.21	4.762480	0.016507
45000.	-78.64	4.534604	0.015776
46000.	-80.06	4.316836	0.015075
47000.	-81.49	4.108765	0.014402
48000.	-82.91	3.909990	0.013757
49000.	-84.34	3.720134	0.013139
50000.	-85.77	3.538827	0.012546
51000.	-87.19	3.365714	0.011978
52000.	-88.62	3.200453	0.011434
53000.	-90.05	3.042716	0.010912
54000.	-91.47	2.892189	0.010413
55000.	-92.90	2.748567	0.009934
56000.	-94.00	2.608768	0.009457
57000.	-94.00	2.478592	0.008985

58000.	-94.00	2.354912	0.008537
59000.	-94.00	2.237403	0.008111
60000.	-92.71	2.125264	0.007677
61000.	-91.34	2.019773	0.007269
62000.	-89.97	1.919880	0.006884
63000.	-88.59	1.825271	0.006521
64000.	-87.22	1.735648	0.006178
65000.	-85.85	1.650731	0.005854
66000.	-84.48	1.570254	0.005548
67000.	-83.11	1.493976	0.005259
68000.	-81.74	1.421662	0.004987
69000.	-80.36	1.353088	0.004729
70000.	-78.99	1.288054	0.004485
71000.	-77.62	1.226361	0.004255
72000.	-76.25	1.167831	0.004038
73000.	-75.10	1.111297	0.003831
74000.	-74.01	1.058576	0.003639
75000.	-72.91	1.008496	0.003457
76000.	-71.81	0.960917	0.003284
77000.	-70.71	0.915709	0.003121
78000.	-69.62	0.872746	0.002966
79000.	-68.52	0.831910	0.002819
80000.	-67.42	0.793092	0.002680
81000.	-66.32	0.756185	0.002548
82000.	-65.23	0.721093	0.002423
83000.	-64.13	0.687720	0.002305
84000.	-63.03	0.655977	0.002192
85000.	-61.94	0.625781	0.002086
86000.	-60.84	0.597052	0.001984
87000.	-59.74	0.569716	0.001888
88000.	-58.64	0.543702	0.001797
89000.	-57.55	0.518941	0.001711
90000.	-56.45	0.495371	0.001629
91000.	-55.35	0.472932	0.001551
92000.	-54.25	0.451565	0.001477
93000.	-53.16	0.431218	0.001406
94000.	-52.06	0.411839	0.001339
95000.	-50.96	0.393379	0.001276
96000.	-49.87	0.375793	0.001216
97000.	-48.77	0.359037	0.001158
98000.	-47.67	0.343069	0.001104
99000.	-46.57	0.327852	0.001052
100000.	-45.48	0.313347	0.001003

U.S. STANDARD ATMOSPHERE 30 N.L. JULY  
1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	88.58	29.930000	0.072370
1000.	83.64	28.920938	0.070565
2000.	78.70	27.937140	0.068790
3000.	73.77	26.978182	0.067044
4000.	70.00	26.039387	0.065171
5000.	66.68	25.132473	0.063298
6000.	63.37	24.251717	0.061466
7000.	60.11	23.395109	0.059667
8000.	56.92	22.565109	0.057906
9000.	53.72	21.759663	0.056187
10000.	50.52	20.972759	0.054494
11000.	47.28	20.214890	0.052860
12000.	44.10	19.479622	0.051260
13000.	40.95	18.766924	0.049695
14000.	37.81	18.076077	0.048168
15000.	34.66	17.406515	0.046679
16000.	31.52	16.757704	0.045227
17000.	28.37	16.129154	0.043811
18000.	25.23	15.520331	0.042431
19000.	22.08	14.930754	0.041085
20000.	18.70	14.351681	0.039771
21000.	14.82	13.798765	0.038552
22000.	10.93	13.262861	0.037361
23000.	7.04	12.743585	0.036197
24000.	3.15	12.240544	0.035060
25000.	-0.73	11.753377	0.033950
26000.	-4.62	11.281694	0.032866
27000.	-8.49	10.823334	0.031801
28000.	-12.35	10.381646	0.030766
29000.	-16.21	9.954387	0.029757
30000.	-20.08	9.541204	0.028773
31000.	-23.94	9.141747	0.027812
32000.	-27.80	8.755677	0.026876
33000.	-31.66	8.382663	0.025963
34000.	-35.53	8.022377	0.025074
35000.	-39.39	7.674489	0.024207
36000.	-43.25	7.338683	0.023362
37000.	-47.09	7.008707	0.022520
38000.	-50.93	6.696417	0.021718
39000.	-54.77	6.395287	0.020939
40000.	-58.61	6.105024	0.020180
41000.	-62.46	5.825329	0.019441
42000.	-66.30	5.555915	0.018723
43000.	-70.14	5.296503	0.018025
44000.	-73.98	5.046808	0.017346
45000.	-77.82	4.806566	0.016687
46000.	-81.66	4.575500	0.016046
47000.	-85.50	4.353352	0.015423
48000.	-89.34	4.139864	0.014819
49000.	-93.18	3.934730	0.014233
50000.	-94.00	3.735636	0.013543
51000.	-94.00	3.549230	0.012867
52000.	-94.00	3.372126	0.012225
53000.	-93.38	3.202778	0.011591
54000.	-92.18	3.043476	0.010979
55000.	-90.97	2.892580	0.010400
56000.	-89.76	2.749626	0.009854
57000.	-88.56	2.614169	0.009338

58000.	-87.35	2.485790	0.008851
59000.	-86.14	2.364103	0.008390
60000.	-84.94	2.248735	0.007955
61000.	-83.73	2.139343	0.007544
62000.	-82.52	2.035596	0.007155
63000.	-81.31	1.937188	0.006787
64000.	-80.11	1.843831	0.006440
65000.	-78.90	1.755247	0.006111
66000.	-77.69	1.671179	0.005800
67000.	-76.49	1.591383	0.005505
68000.	-75.28	1.515632	0.005227
69000.	-74.08	1.442211	0.004958
70000.	-72.99	1.373969	0.004710
71000.	-71.89	1.309133	0.004475
72000.	-70.79	1.247529	0.004253
73000.	-69.69	1.188985	0.004042
74000.	-68.60	1.133341	0.003842
75000.	-67.50	1.080446	0.003652
76000.	-66.40	1.030156	0.003473
77000.	-65.31	0.982340	0.003302
78000.	-64.21	0.936866	0.003141
79000.	-63.11	0.893613	0.002987
80000.	-62.01	0.852470	0.002842
81000.	-60.92	0.813326	0.002704
82000.	-59.82	0.776081	0.002573
83000.	-58.72	0.740635	0.002449
84000.	-57.62	0.706899	0.002331
85000.	-56.53	0.674786	0.002219
86000.	-55.43	0.644212	0.002113
87000.	-54.33	0.615101	0.002012
88000.	-53.23	0.587379	0.001916
89000.	-52.14	0.560976	0.001825
90000.	-51.04	0.535827	0.001738
91000.	-49.94	0.511868	0.001656
92000.	-48.85	0.489039	0.001578
93000.	-47.75	0.467287	0.001504
94000.	-46.65	0.446555	0.001433
95000.	-45.55	0.426795	0.001366
96000.	-44.46	0.407957	0.001302
97000.	-43.36	0.389998	0.001242
98000.	-42.26	0.372874	0.001184
99000.	-41.16	0.356543	0.001129
100000.	-40.07	0.340968	0.001077

U.S. STANDARD ATMOSPHERE 60 N.L.  
JANUARY 1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	3.44	29.930000	0.085690
1000.	4.55	28.742758	0.082093
2000.	5.67	27.605267	0.078656
3000.	6.78	26.515345	0.075370
4000.	5.82	25.472513	0.072555
5000.	4.05	24.464087	0.069949
6000.	2.28	23.491957	0.067427
7000.	0.51	22.554897	0.064987
8000.	-1.26	21.651871	0.062626
9000.	-3.03	20.781656	0.060342
10000.	-4.81	19.943291	0.058133
11000.	-6.58	19.135645	0.055997
12000.	-9.37	18.365019	0.054075
13000.	-13.12	17.612272	0.052294
14000.	-16.86	16.884424	0.050557
15000.	-20.61	16.180857	0.048863
16000.	-24.35	15.500954	0.047213
17000.	-28.10	14.844100	0.045605
18000.	-31.85	14.209730	0.044038
19000.	-35.59	13.597238	0.042512
20000.	-39.34	13.013515	0.041049
21000.	-43.07	12.442775	0.039601
22000.	-46.81	11.892262	0.038191
23000.	-50.54	11.361434	0.036820
24000.	-54.28	10.849751	0.035486
25000.	-58.01	10.356694	0.034188
26000.	-61.75	9.881749	0.032926
27000.	-65.48	9.424415	0.031700
28000.	-68.79	8.987750	0.030487
29000.	-68.79	8.566411	0.029058
30000.	-68.79	8.164824	0.027696
31000.	-68.79	7.782064	0.026398
32000.	-68.79	7.417246	0.025160
33000.	-68.79	7.069531	0.023981
34000.	-68.79	6.738117	0.022856
35000.	-68.79	6.422239	0.021785
36000.	-68.79	6.121169	0.020764
37000.	-68.79	5.834213	0.019790
38000.	-68.79	5.560709	0.018863
39000.	-68.79	5.300028	0.017978
40000.	-68.79	5.051567	0.017135
41000.	-68.79	4.814753	0.016332
42000.	-68.79	4.589040	0.015567
43000.	-68.79	4.373910	0.014837
44000.	-68.79	4.168864	0.014141
45000.	-68.79	3.973431	0.013478
46000.	-68.79	3.787160	0.012846
47000.	-68.79	3.609620	0.012244
48000.	-68.79	3.440404	0.011670
49000.	-68.79	3.279120	0.011123
50000.	-69.05	3.130737	0.010627
51000.	-69.38	2.982184	0.010131
52000.	-69.71	2.842124	0.009663
53000.	-70.04	2.708530	0.009217
54000.	-70.37	2.581094	0.008791
55000.	-70.70	2.459570	0.008384
56000.	-71.03	2.343674	0.007996
57000.	-71.36	2.233133	0.007625

58000.	-71.69	2.127721	0.007271
59000.	-72.02	2.027216	0.006934
60000.	-72.35	1.931370	0.006611
61000.	-72.68	1.839982	0.006304
62000.	-73.00	1.752849	0.006011
63000.	-73.33	1.669764	0.005731
64000.	-73.66	1.590556	0.005463
65000.	-73.99	1.515045	0.005208
66000.	-74.32	1.443053	0.004965
67000.	-74.65	1.374429	0.004733
68000.	-74.98	1.309017	0.004512
69000.	-75.31	1.246662	0.004300
70000.	-75.64	1.187232	0.004099
71000.	-75.97	1.130583	0.003907
72000.	-76.30	1.076590	0.003723
73000.	-76.63	1.025135	0.003548
74000.	-76.95	0.976097	0.003382
75000.	-77.28	0.929369	0.003223
76000.	-77.61	0.884839	0.003071
77000.	-77.94	0.842406	0.002926
78000.	-78.27	0.801977	0.002788
79000.	-78.60	0.763450	0.002656
80000.	-78.93	0.726747	0.002531
81000.	-79.26	0.691778	0.002411
82000.	-79.59	0.658464	0.002297
83000.	-79.06	0.628055	0.002188
84000.	-78.51	0.597860	0.002080
85000.	-77.96	0.569155	0.001977
86000.	-77.41	0.541868	0.001880
87000.	-76.86	0.515924	0.001787
88000.	-76.31	0.491258	0.001699
89000.	-75.77	0.467804	0.001616
90000.	-75.22	0.445501	0.001536
91000.	-74.67	0.424290	0.001461
92000.	-74.12	0.404117	0.001390
93000.	-73.57	0.384931	0.001322
94000.	-73.02	0.366680	0.001257
95000.	-72.47	0.349320	0.001196
96000.	-71.93	0.332803	0.001138
97000.	-71.38	0.317089	0.001083
98000.	-70.83	0.302138	0.001030
99000.	-70.28	0.287911	0.000980
100000.	-69.73	0.274374	0.000933

U.S. STANDARD ATMOSPHERE 60 N.L.  
JANUARY WARM 1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	3.44	29.930000	0.085690
1000.	4.55	28.742758	0.082093
2000.	5.67	27.605267	0.078656
3000.	6.78	26.515345	0.075370
4000.	5.82	25.472513	0.072555
5000.	4.05	24.464087	0.069949
6000.	2.28	23.491957	0.067427
7000.	0.51	22.554897	0.064987
8000.	-1.26	21.651871	0.062626
9000.	-3.03	20.781656	0.060342
10000.	-4.81	19.943291	0.058133
11000.	-6.58	19.135645	0.055997
12000.	-9.37	18.365019	0.054075
13000.	-13.11	17.612272	0.052293
14000.	-16.86	16.884432	0.050556
15000.	-20.61	16.180868	0.048863
16000.	-24.35	15.500962	0.047213
17000.	-28.10	14.849421	0.045621
18000.	-31.84	14.214823	0.044053
19000.	-35.59	13.602118	0.042527
20000.	-39.33	13.010742	0.041040
21000.	-43.08	12.440118	0.039593
22000.	-46.82	11.892254	0.038192
23000.	-50.55	11.361412	0.036821
24000.	-54.29	10.849710	0.035486
25000.	-58.02	10.359559	0.034198
26000.	-61.75	9.884475	0.032936
27000.	-65.49	9.427003	0.031709
28000.	-68.67	8.987759	0.030478
29000.	-67.57	8.567212	0.028970
30000.	-66.48	8.167365	0.027541
31000.	-65.38	7.787205	0.026186
32000.	-64.28	7.425723	0.024901
33000.	-63.18	7.081953	0.023683
34000.	-62.09	6.754990	0.022527
35000.	-60.99	6.443955	0.021431
36000.	-59.89	6.148040	0.020390
37000.	-58.80	5.866466	0.019403
38000.	-57.70	5.601789	0.018477
39000.	-56.60	5.346603	0.017588
40000.	-56.19	5.104792	0.016775
41000.	-56.19	4.872783	0.016013
42000.	-56.19	4.651320	0.015285
43000.	-56.19	4.439921	0.014590
44000.	-56.19	4.238132	0.013927
45000.	-56.19	4.045512	0.013294
46000.	-56.19	3.861648	0.012690
47000.	-56.19	3.686140	0.012113
48000.	-56.19	3.518608	0.011563
49000.	-56.19	3.358691	0.011037
50000.	-56.19	3.206041	0.010536
51000.	-56.19	3.060330	0.010057
52000.	-56.19	2.921240	0.009600
53000.	-56.19	2.788473	0.009163
54000.	-56.19	2.661739	0.008747
55000.	-56.19	2.540766	0.008349
56000.	-56.19	2.425291	0.007970
57000.	-56.19	2.315064	0.007608

58000.	-56.19	2.209846	0.007262
59000.	-56.19	2.109410	0.006932
60000.	-56.19	2.013540	0.006617
61000.	-56.19	1.922026	0.006316
62000.	-56.19	1.834672	0.006029
63000.	-56.19	1.751288	0.005755
64000.	-56.19	1.671694	0.005493
65000.	-56.19	1.595717	0.005244
66000.	-56.19	1.523193	0.005005
67000.	-56.19	1.453965	0.004778
68000.	-56.19	1.387884	0.004561
69000.	-56.19	1.324806	0.004354
70000.	-56.19	1.264595	0.004156
71000.	-56.19	1.207120	0.003967
72000.	-56.19	1.152258	0.003787
73000.	-56.19	1.099889	0.003614
74000.	-56.19	1.049900	0.003450
75000.	-56.19	1.002183	0.003293
76000.	-56.19	0.956634	0.003144
77000.	-56.19	0.913156	0.003001
78000.	-56.19	0.871654	0.002864
79000.	-56.19	0.832038	0.002734
80000.	-56.19	0.794223	0.002610
81000.	-56.19	0.758126	0.002491
82000.	-56.19	0.723670	0.002378
83000.	-56.19	0.690780	0.002270
84000.	-56.01	0.661053	0.002171
85000.	-55.46	0.631040	0.002070
86000.	-54.91	0.602430	0.001973
87000.	-54.36	0.575154	0.001882
88000.	-53.81	0.549146	0.001794
89000.	-53.27	0.524347	0.001711
90000.	-52.72	0.500699	0.001631
91000.	-52.17	0.478148	0.001556
92000.	-51.62	0.456641	0.001484
93000.	-51.07	0.436127	0.001415
94000.	-50.52	0.416561	0.001350
95000.	-49.97	0.397898	0.001288
96000.	-49.43	0.380094	0.001228
97000.	-48.88	0.363109	0.001172
98000.	-48.33	0.346903	0.001118
99000.	-47.78	0.331442	0.001067
100000.	-47.23	0.316689	0.001018

U.S. STANDARD ATMOSPHERE 60 N.L.  
JANUARY COLD 1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	3.44	29.930000	0.085675
1000.	4.55	28.742758	0.082079
2000.	5.67	27.605267	0.078642
3000.	6.78	26.515345	0.075357
4000.	5.82	25.472513	0.072542
5000.	4.05	24.464087	0.069936
6000.	2.28	23.491957	0.067415
7000.	0.51	22.554897	0.064975
8000.	-1.26	21.651871	0.062614
9000.	-3.04	20.781656	0.060331
10000.	-4.81	19.943291	0.058123
11000.	-6.58	19.135645	0.055987
12000.	-9.37	18.365019	0.054065
13000.	-13.12	17.612272	0.052284
14000.	-16.86	16.884432	0.050547
15000.	-20.61	16.180868	0.048854
16000.	-24.35	15.500962	0.047204
17000.	-28.10	14.849421	0.045612
18000.	-31.84	14.214828	0.044045
19000.	-35.58	13.602125	0.042519
20000.	-39.33	13.010757	0.041033
21000.	-43.07	12.442302	0.039592
22000.	-46.80	11.891812	0.038183
23000.	-50.54	11.361007	0.036812
24000.	-54.28	10.851192	0.035484
25000.	-58.01	10.358074	0.034186
26000.	-61.75	9.883068	0.032925
27000.	-65.49	9.425665	0.031699
28000.	-68.80	8.987750	0.030482
29000.	-68.80	8.566411	0.029053
30000.	-68.80	8.164824	0.027691
31000.	-68.80	7.782064	0.026393
32000.	-68.80	7.417246	0.025156
33000.	-68.80	7.069531	0.023976
34000.	-68.80	6.738117	0.022852
35000.	-68.80	6.422239	0.021781
36000.	-68.80	6.121169	0.020760
37000.	-68.80	5.834213	0.019787
38000.	-68.80	5.560709	0.018859
39000.	-68.80	5.300028	0.017975
40000.	-69.14	5.054054	0.017156
41000.	-69.69	4.816776	0.016374
42000.	-70.24	4.590295	0.015626
43000.	-70.79	4.374174	0.014911
44000.	-71.34	4.167953	0.014228
45000.	-71.88	3.971179	0.013576
46000.	-72.43	3.783434	0.012952
47000.	-72.98	3.604318	0.012356
48000.	-73.53	3.433446	0.011787
49000.	-74.08	3.270453	0.011244
50000.	-74.63	3.114974	0.010724
51000.	-75.18	2.966689	0.010228
52000.	-75.73	2.825262	0.009755
53000.	-76.27	2.690388	0.009302
54000.	-76.82	2.561774	0.008870
55000.	-77.37	2.439138	0.008458
56000.	-77.92	2.322212	0.008064
57000.	-78.47	2.210731	0.007688

58000.	-79.02	2.104450	0.007329
59000.	-79.57	2.003142	0.006986
60000.	-80.11	1.906574	0.006659
61000.	-80.66	1.814526	0.006347
62000.	-81.21	1.726807	0.006049
63000.	-81.76	1.643206	0.005764
64000.	-82.31	1.563537	0.005493
65000.	-82.86	1.487628	0.005234
66000.	-83.41	1.415295	0.004986
67000.	-83.95	1.346387	0.004751
68000.	-84.50	1.280742	0.004525
69000.	-85.05	1.218205	0.004311
70000.	-85.60	1.158639	0.004106
71000.	-86.15	1.101899	0.003911
72000.	-86.70	1.047864	0.003724
73000.	-87.25	0.996406	0.003547
74000.	-87.80	0.947404	0.003377
75000.	-88.34	0.900744	0.003216
76000.	-88.89	0.856319	0.003062
77000.	-89.44	0.814024	0.002915
78000.	-89.99	0.773759	0.002775
79000.	-90.54	0.735430	0.002641
80000.	-91.09	0.698948	0.002514
81000.	-91.64	0.664227	0.002393
82000.	-92.18	0.631179	0.002277
83000.	-92.73	0.599731	0.002167
84000.	-93.28	0.569809	0.002062
85000.	-93.83	0.541334	0.001962
86000.	-94.38	0.514245	0.001866
87000.	-94.93	0.488473	0.001775
88000.	-95.48	0.463956	0.001689
89000.	-96.02	0.440637	0.001606
90000.	-96.57	0.418456	0.001528
91000.	-97.12	0.397363	0.001453
92000.	-97.67	0.377302	0.001382
93000.	-98.22	0.358225	0.001314
94000.	-98.77	0.340087	0.001249
95000.	-99.32	0.322841	0.001188
96000.	-99.87	0.306445	0.001129
97000.	-100.41	0.290859	0.001073
98000.	-100.96	0.276043	0.001020
99000.	-100.75	0.263009	0.000971
100000.	-99.99	0.249624	0.000920

U.S. STANDARD ATMOSPHERE 75 N.L.  
JANUARY 1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	-11.08	29.930000	0.088421
1000.	-9.43	28.704733	0.084490
2000.	-7.77	27.533882	0.080747
3000.	-6.12	26.414778	0.077183
4000.	-4.47	25.345001	0.073788
5000.	-3.18	24.334593	0.070647
6000.	-6.21	23.350319	0.068243
7000.	-9.24	22.399656	0.065904
8000.	-12.27	21.481672	0.063631
9000.	-15.30	20.595469	0.061422
10000.	-18.32	19.740116	0.059275
11000.	-21.35	18.914774	0.057189
12000.	-24.38	18.118567	0.055163
13000.	-27.41	17.350668	0.053195
14000.	-30.44	16.610258	0.051284
15000.	-33.47	15.896540	0.049430
16000.	-36.49	15.223579	0.047675
17000.	-39.51	14.560266	0.045926
18000.	-42.53	13.921371	0.044229
19000.	-45.56	13.306165	0.042583
20000.	-48.58	12.713948	0.040986
21000.	-51.60	12.144007	0.039439
22000.	-54.62	11.595658	0.037939
23000.	-57.64	11.068241	0.036486
24000.	-60.66	10.561112	0.035077
25000.	-63.68	10.073616	0.033714
26000.	-66.70	9.605149	0.032393
27000.	-69.73	9.155105	0.031114
28000.	-72.44	8.734642	0.029893
29000.	-72.71	8.320900	0.028497
30000.	-72.98	7.926447	0.027166
31000.	-73.26	7.550524	0.025896
32000.	-73.53	7.192091	0.024684
33000.	-73.81	6.850464	0.023528
34000.	-74.08	6.524865	0.022426
35000.	-74.36	6.214452	0.021374
36000.	-74.63	5.918628	0.020371
37000.	-74.90	5.636762	0.019415
38000.	-75.22	5.374128	0.018526
39000.	-75.66	5.117700	0.017662
40000.	-76.10	4.873233	0.016837
41000.	-76.54	4.640208	0.016051
42000.	-76.98	4.418058	0.015300
43000.	-77.42	4.206289	0.014583
44000.	-77.86	4.004470	0.013899
45000.	-78.30	3.812125	0.013247
46000.	-78.74	3.628802	0.012624
47000.	-79.17	3.454090	0.012031
48000.	-79.61	3.287612	0.011464
49000.	-80.05	3.128973	0.010923
50000.	-80.49	2.977814	0.010408
51000.	-80.93	2.833807	0.009916
52000.	-81.37	2.696607	0.009447
53000.	-81.81	2.565902	0.008999
54000.	-82.25	2.441391	0.008573
55000.	-82.69	2.322789	0.008166
56000.	-83.12	2.209812	0.007777
57000.	-83.56	2.102210	0.007407

58000.	-84.00	1.999735	0.007055
59000.	-84.44	1.902149	0.006718
60000.	-84.88	1.809214	0.006397
61000.	-85.32	1.720715	0.006092
62000.	-85.76	1.636455	0.005800
63000.	-85.91	1.560343	0.005533
64000.	-85.91	1.483860	0.005261
65000.	-85.91	1.411126	0.005003
66000.	-85.91	1.341957	0.004758
67000.	-85.91	1.276179	0.004525
68000.	-85.91	1.213624	0.004303
69000.	-85.91	1.154136	0.004092
70000.	-85.91	1.097564	0.003892
71000.	-85.91	1.043765	0.003701
72000.	-85.91	0.992604	0.003519
73000.	-85.91	0.943949	0.003347
74000.	-85.91	0.897680	0.003183
75000.	-85.91	0.853679	0.003027
76000.	-85.91	0.811834	0.002879
77000.	-85.91	0.772041	0.002737
78000.	-85.91	0.734198	0.002603
79000.	-85.91	0.698209	0.002476
80000.	-85.91	0.663986	0.002354
81000.	-85.91	0.631439	0.002239
82000.	-85.91	0.600488	0.002129
83000.	-85.91	0.571054	0.002025
84000.	-85.91	0.543063	0.001926
85000.	-85.91	0.516444	0.001831
86000.	-85.91	0.491129	0.001741
87000.	-85.91	0.467056	0.001656
88000.	-85.91	0.444162	0.001575
89000.	-85.91	0.422391	0.001498
90000.	-85.91	0.401687	0.001424
91000.	-85.91	0.381997	0.001354
92000.	-85.91	0.363273	0.001288
93000.	-85.91	0.345466	0.001225
94000.	-85.91	0.328533	0.001165
95000.	-85.91	0.312429	0.001108
96000.	-85.91	0.297115	0.001053
97000.	-85.91	0.282551	0.001002
98000.	-85.91	0.268702	0.000953

U.S. STANDARD ATMOSPHERE 75 N.L.  
JANUARY COLD 1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	-11.08	29.930000	0.088421
1000.	-9.43	28.704733	0.084490
2000.	-7.77	27.533882	0.080747
3000.	-6.12	26.414778	0.077183
4000.	-4.47	25.345001	0.073788
5000.	-3.18	24.334593	0.070647
6000.	-6.21	23.350319	0.068243
7000.	-9.24	22.399656	0.065904
8000.	-12.27	21.481672	0.063631
9000.	-15.30	20.595469	0.061422
10000.	-18.32	19.740116	0.059275
11000.	-21.35	18.914774	0.057189
12000.	-24.38	18.118567	0.055163
13000.	-27.41	17.350668	0.053195
14000.	-30.44	16.610258	0.051284
15000.	-33.47	15.896540	0.049430
16000.	-36.49	15.223579	0.047675
17000.	-39.51	14.560266	0.045926
18000.	-42.53	13.921371	0.044229
19000.	-45.56	13.306165	0.042583
20000.	-48.58	12.713948	0.040986
21000.	-51.60	12.144007	0.039439
22000.	-54.62	11.595658	0.037939
23000.	-57.64	11.068241	0.036486
24000.	-60.66	10.561112	0.035077
25000.	-63.68	10.073616	0.033714
26000.	-66.70	9.605149	0.032393
27000.	-69.73	9.155105	0.031114
28000.	-72.50	8.734646	0.029898
29000.	-73.32	8.320555	0.028541
30000.	-74.14	7.925258	0.027243
31000.	-74.97	7.547952	0.026002
32000.	-75.79	7.187883	0.024815
33000.	-76.61	6.844251	0.023679
34000.	-77.44	6.516364	0.022593
35000.	-78.26	6.203526	0.021555
36000.	-79.08	5.905084	0.020562
37000.	-79.90	5.620397	0.019613
38000.	-80.73	5.348866	0.018706
39000.	-81.55	5.089904	0.017839
40000.	-82.37	4.842948	0.017011
41000.	-83.20	4.607485	0.016219
42000.	-84.02	4.382973	0.015463
43000.	-84.84	4.168957	0.014740
44000.	-85.67	3.964960	0.014050
45000.	-86.49	3.770519	0.013390
46000.	-87.31	3.585222	0.012760
47000.	-88.13	3.408653	0.012159
48000.	-88.96	3.240407	0.011584
49000.	-89.78	3.080130	0.011036
50000.	-90.60	2.927442	0.010512
51000.	-91.43	2.782011	0.010012
52000.	-92.25	2.643503	0.009535
53000.	-93.07	2.511603	0.009079
54000.	-93.89	2.386011	0.008645
55000.	-94.72	2.266431	0.008230
56000.	-95.54	2.152603	0.007834
57000.	-96.36	2.044248	0.007457

58000.	-96.90	1.947340	0.007114
59000.	-97.23	1.849023	0.006761
60000.	-97.56	1.755598	0.006425
61000.	-97.89	1.666802	0.006106
62000.	-98.21	1.582422	0.005802
63000.	-98.54	1.502252	0.005513
64000.	-98.87	1.426077	0.005238
65000.	-99.20	1.353691	0.004977
66000.	-99.53	1.281919	0.004728
67000.	-99.86	1.219592	0.004492
68000.	-100.19	1.157524	0.004267
69000.	-100.52	1.098564	0.004054
70000.	-100.85	1.042552	0.003851
71000.	-101.18	0.989357	0.003657
72000.	-101.51	0.936827	0.003474
73000.	-101.84	0.890836	0.003299
74000.	-102.16	0.845255	0.003133
75000.	-102.49	0.801969	0.002976
76000.	-102.82	0.760861	0.002826
77000.	-103.15	0.721827	0.002683
78000.	-103.48	0.684760	0.002548
79000.	-103.81	0.649568	0.002419
80000.	-104.14	0.616153	0.002297
81000.	-104.47	0.584427	0.002181
82000.	-104.80	0.554310	0.002070
83000.	-104.80	0.527150	0.001969
84000.	-104.80	0.499970	0.001867
85000.	-104.80	0.474192	0.001771
86000.	-104.80	0.449744	0.001680
87000.	-104.80	0.426555	0.001593
88000.	-104.80	0.404563	0.001511
89000.	-104.80	0.383704	0.001433
90000.	-104.80	0.363921	0.001359
91000.	-104.80	0.345157	0.001289
92000.	-104.80	0.327361	0.001223
93000.	-104.80	0.310483	0.001160
94000.	-104.80	0.294475	0.001100
95000.	-104.80	0.279292	0.001043
96000.	-104.80	0.264892	0.000989
97000.	-104.80	0.251234	0.000938
98000.	-104.80	0.238281	0.000890

U.S. STANDARD ATMOSPHERE 75 N.L.  
JANUARY WARM 1966

ALT ft	TEMP F	PRES in Hg	DENS lb/ft <sup>3</sup>
0.	-11.08	29.930000	0.088421
1000.	-9.43	28.704733	0.084490
2000.	-7.77	27.533882	0.080747
3000.	-6.12	26.414778	0.077183
4000.	-4.47	25.345001	0.073788
5000.	-3.18	24.334593	0.070647
6000.	-6.21	23.350319	0.068243
7000.	-9.24	22.399656	0.065904
8000.	-12.27	21.481672	0.063631
9000.	-15.30	20.595469	0.061422
10000.	-18.32	19.740116	0.059275
11000.	-21.35	18.914774	0.057189
12000.	-24.38	18.118567	0.055163
13000.	-27.41	17.350668	0.053195
14000.	-30.44	16.610258	0.051284
15000.	-33.47	15.896540	0.049430
16000.	-36.49	15.223579	0.047675
17000.	-39.51	14.560266	0.045926
18000.	-42.53	13.921371	0.044229
19000.	-45.56	13.306165	0.042583
20000.	-48.58	12.713948	0.040986
21000.	-51.60	12.144007	0.039439
22000.	-54.62	11.595658	0.037939
23000.	-57.64	11.068241	0.036486
24000.	-60.66	10.561112	0.035077
25000.	-63.68	10.073816	0.033714
26000.	-66.70	9.605149	0.032393
27000.	-69.73	9.155105	0.031114
28000.	-72.23	8.734682	0.029878
29000.	-70.70	8.322070	0.028354
30000.	-69.16	7.930474	0.026913
31000.	-67.62	7.558734	0.025551
32000.	-66.09	7.205768	0.024263
33000.	-64.55	6.870569	0.023044
34000.	-63.01	6.552169	0.021891
35000.	-61.48	6.249673	0.020800
36000.	-59.94	5.962228	0.019767
37000.	-59.81	5.692842	0.018868
38000.	-59.81	5.431586	0.018002
39000.	-59.81	5.182320	0.017176
40000.	-59.81	4.944493	0.016387
41000.	-59.81	4.717581	0.015635
42000.	-59.81	4.501081	0.014918
43000.	-59.81	4.294518	0.014233
44000.	-59.81	4.097434	0.013580
45000.	-59.81	3.909395	0.012957
46000.	-59.81	3.729985	0.012362
47000.	-59.81	3.558808	0.011795
48000.	-59.81	3.395488	0.011254
49000.	-59.81	3.239662	0.010737
50000.	-59.81	3.090988	0.010244
51000.	-59.81	2.949136	0.009774
52000.	-59.81	2.813794	0.009326
53000.	-59.81	2.684664	0.008898
54000.	-59.81	2.561459	0.008489
55000.	-59.81	2.443909	0.008100
56000.	-39.74	2.336717	0.007743
57000.	-59.47	2.229525	0.007383

58000.	-59.19	2.127328	0.007040
59000.	-58.92	2.029876	0.006713
60000.	-58.65	1.936960	0.006401
61000.	-58.37	1.848345	0.005104
62000.	-58.10	1.763842	0.005821
63000.	-57.82	1.683267	0.005551
64000.	-57.55	1.606413	0.005294
65000.	-57.27	1.533114	0.005049
66000.	-57.00	1.463220	0.004816
67000.	-56.73	1.396544	0.004593
68000.	-56.45	1.332951	0.004381
69000.	-56.18	1.272303	0.004179
70000.	-55.90	1.214445	0.003986
71000.	-55.63	1.159254	0.003802
72000.	-55.35	1.106614	0.003627
73000.	-55.08	1.056387	0.003460
74000.	-54.81	1.008475	0.003301
75000.	-54.53	0.962774	0.003149
76000.	-54.26	0.919164	0.003005
77000.	-53.98	0.877556	0.002867
78000.	-53.71	0.837861	0.002735
79000.	-53.43	0.799990	0.002610
80000.	-53.16	0.763850	0.002490
81000.	-52.89	0.729367	0.002376
82000.	-52.61	0.696464	0.002267
83000.	-51.80	0.666748	0.002166
84000.	-50.98	0.636766	0.002065
85000.	-50.15	0.608188	0.001968
86000.	-49.33	0.580946	0.001876
87000.	-48.51	0.554977	0.001789
88000.	-47.69	0.530216	0.001706
89000.	-46.86	0.506606	0.001626
90000.	-46.04	0.484091	0.001551
91000.	-45.22	0.462619	0.001479
92000.	-44.39	0.442139	0.001411
93000.	-43.57	0.422603	0.001346
94000.	-42.75	0.403966	0.001284
95000.	-41.92	0.386186	0.001225
96000.	-41.10	0.369222	0.001169
97000.	-40.28	0.353033	0.001116
98000.	-39.46	0.337584	0.001065

**APPENDIX F.**  
**MIL-STD-210A DATA FILES**

MIL STD 210A  
COLD ATMOSPHERE

ALTITUDE ft	TEMPERATURE F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.000000E+00	-60.00000	29.90000	9.9417813E-02
500.0000	-53.30000	29.40000	9.5878668E-02
1000.000	-46.50000	28.90000	9.2661254E-02
1500.000	-39.80000	28.30000	8.9443855E-02
2000.000	-33.00000	27.80000	8.6548194E-02
2500.000	-26.10000	27.30000	8.3652526E-02
3000.000	-19.30000	26.80000	8.0756865E-02
3311.000	-15.00000	26.50000	7.9148166E-02
3500.000	-15.00000	26.30000	7.8504682E-02
4000.000	-15.00000	25.80000	7.7217720E-02
4500.000	-15.00000	25.40000	7.5609013E-02
5000.000	-15.00000	24.90000	7.4322060E-02
5500.000	-15.00000	24.40000	7.3035091E-02
6000.000	-15.00000	24.00000	7.1426392E-02
6500.000	-15.00000	23.50000	7.0139430E-02
7000.000	-15.00000	23.10000	6.8852469E-02
7500.000	-15.00000	22.70000	6.7565501E-02
8000.000	-15.00000	22.20000	6.6278547E-02
8500.000	-15.00000	21.80000	6.4991586E-02
9000.000	-15.00000	21.40000	6.3704617E-02
9500.000	-15.00000	21.00000	6.2739395E-02
10000.00	-15.00000	20.60000	6.1452437E-02
10500.00	-15.00000	20.20000	6.0165472E-02
10744.00	-15.00000	20.00000	5.9521988E-02
11000.00	-15.80000	19.80000	5.9200250E-02
11500.00	-17.50000	19.40000	5.8235027E-02
12000.00	-19.10000	19.00000	5.7269808E-02
12500.00	-20.80000	18.70000	5.6304585E-02
13000.00	-22.40000	18.30000	5.5661101E-02
13500.00	-24.10000	17.90000	5.4695882E-02
14000.00	-25.70000	17.60000	5.3730659E-02
14500.00	-27.30000	17.20000	5.2765440E-02
15000.00	-29.10000	16.90000	5.2121960E-02
15500.00	-30.80000	16.50000	5.1156737E-02
16000.00	-32.40000	16.20000	5.0513256E-02
16500.00	-34.10000	15.90000	4.9548034E-02
17000.00	-35.80000	15.60000	4.8582811E-02
17500.00	-37.50000	15.30000	4.7939334E-02
18000.00	-39.20000	14.90000	4.7295853E-02
18500.00	-41.00000	14.60000	4.6330627E-02
19000.00	-42.70000	14.30000	4.5687150E-02
19500.00	-44.40000	14.00000	4.4721927E-02
20000.00	-46.10000	13.80000	4.4078447E-02
20500.00	-47.90000	13.50000	4.3434966E-02
21000.00	-49.60000	13.20000	4.2791486E-02
21500.00	-51.40000	12.90000	4.1826263E-02
22000.00	-53.20000	12.60000	4.1182786E-02
22500.00	-54.90000	12.40000	4.0539302E-02
23000.00	-56.70000	12.10000	3.9895821E-02
23500.00	-58.50000	11.80000	3.9252341E-02
24000.00	-60.30000	11.60000	3.8608860E-02
24500.00	-62.10000	11.30000	3.7965380E-02
25000.00	-63.90000	11.10000	3.7321895E-02
25500.00	-65.70000	10.90000	3.6678419E-02
26000.00	-67.50000	10.60000	3.6034938E-02
26500.00	-69.30000	10.40000	3.5391454E-02
27000.00	-71.10000	10.20000	3.4747973E-02

27500.00	-73.00000	9.900000	3.4104493E-02
28000.00	-74.80000	9.700000	3.3461012E-02
28500.00	-76.70000	9.500000	3.2817531E-02
29000.00	-78.60000	9.300000	3.2495793E-02
29500.00	-80.40000	9.100000	3.1852309E-02
30000.00	-82.30000	8.900000	3.1208830E-02
30500.00	-84.20000	8.700000	3.0565348E-02
30715.00	-85.00000	8.600000	3.0565348E-02
31000.00	-85.00000	8.500000	2.9921865E-02
31500.00	-85.00000	8.300000	2.9278383E-02
32000.00	-85.00000	8.100000	2.8634904E-02
32500.00	-85.00000	7.900000	2.7991422E-02
33000.00	-85.00000	7.700000	2.7347941E-02
33500.00	-85.00000	7.600000	2.6704459E-02
34000.00	-85.00000	7.400000	2.6060980E-02
34500.00	-85.00000	7.200000	2.5417499E-02
35000.00	-85.00000	7.000000	2.5095759E-02
35500.00	-85.00000	6.900000	2.4452277E-02
36000.00	-85.00000	6.700000	2.3808796E-02
36500.00	-85.00000	6.600000	2.3165314E-02
37000.00	-85.00000	6.400000	2.2521835E-02
37500.00	-85.00000	6.200000	2.2200093E-02
38000.00	-85.00000	6.100000	2.1556614E-02
38500.00	-85.00000	6.000000	2.1234872E-02
39000.00	-85.00000	5.800000	2.0591393E-02
39500.00	-85.00000	5.700000	1.9947911E-02
40000.00	-85.00000	5.500000	1.9626170E-02
40500.00	-85.00000	5.400000	1.9304430E-02
41000.00	-85.00000	5.300000	1.8660948E-02
41500.00	-85.00000	5.200000	1.8339209E-02
42000.00	-85.00000	5.000000	1.7695727E-02
42377.00	-85.00000	4.900000	1.7373987E-02
42500.00	-85.60000	4.900000	1.7373987E-02
43000.00	-88.20000	4.800000	1.7052246E-02
43500.00	-90.70000	4.700000	1.6730506E-02
44000.00	-93.30000	4.600000	1.6408766E-02
44500.00	-96.00000	4.500000	1.6408766E-02
45000.00	-98.60000	4.400000	1.6087025E-02
45500.00	-101.2000	4.300000	1.5765285E-02
46000.00	-103.9000	4.200000	1.5443545E-02
46500.00	-106.6000	4.100000	1.5121804E-02
47000.00	-109.3000	4.000000	1.5121804E-02
47500.00	-112.0000	3.900000	1.4800062E-02
48000.00	-114.7000	3.800000	1.4478322E-02
48500.00	-117.2000	3.700000	1.4156581E-02
49000.00	-119.2000	3.600000	1.4156581E-02
49500.00	-121.0000	3.500000	1.3834842E-02
50000.00	-122.9000	3.400000	1.3513100E-02
50500.00	-124.7000	3.300000	1.3191366E-02
50583.00	-125.0000	3.300000	1.3191350E-02
51000.00	-125.0000	3.300000	1.2869619E-02
51500.00	-125.0000	3.200000	1.2547879E-02
52000.00	-125.0000	3.100000	1.2226138E-02
52500.00	-125.0000	3.000000	1.1904398E-02
53000.00	-125.0000	3.000000	1.1904398E-02
53500.00	-125.0000	2.900000	1.1582657E-02
54000.00	-125.0000	2.800000	1.1260917E-02
54500.00	-125.0000	2.800000	1.0939177E-02
55000.00	-125.0000	2.700000	1.0617436E-02
55500.00	-125.0000	2.600000	1.0295697E-02
56000.00	-125.0000	2.600000	1.0295697E-02
56500.00	-125.0000	2.500000	9.9739553E-03

57000.00	-125.0000	2.400000	9.6522151E-03
57500.00	-125.0000	2.400000	9.3304738E-03
58000.00	-125.0000	2.300000	9.3304738E-03
58500.00	-125.0000	2.300000	9.0087345E-03
59000.00	-125.0000	2.200000	8.6869933E-03
59500.00	-125.0000	2.200000	8.6869933E-03
60000.00	-125.0000	2.100000	8.3652530E-03
60500.00	-125.0000	2.100000	8.0435127E-03
61000.00	-125.0000	2.000000	8.0435127E-03
61087.00	-125.0000	2.000000	8.0435127E-03
61500.00	-123.7000	2.000000	7.7217724E-03
62000.00	-122.1000	1.900000	7.7217724E-03
62500.00	-120.5000	1.900000	7.4000312E-03
63000.00	-119.0000	1.800000	7.0782905E-03
63500.00	-117.5000	1.800000	7.0782905E-03
64000.00	-116.0000	1.700000	6.7565502E-03
64500.00	-114.6000	1.700000	6.4348094E-03
65000.00	-113.2000	1.700000	6.4348094E-03
65500.00	-111.8000	1.600000	6.1130691E-03
66000.00	-110.4000	1.600000	6.1130691E-03
66500.00	-109.1000	1.500000	5.7913284E-03
67000.00	-107.8000	1.500000	5.7913284E-03
67500.00	-106.5000	1.500000	5.4695886E-03
68000.00	-105.3000	1.400000	5.4695886E-03
68500.00	-104.0000	1.400000	5.1478483E-03
69000.00	-102.8000	1.400000	5.1478483E-03
69500.00	-101.7000	1.300000	4.8261075E-03
70000.00	-100.5000	1.300000	4.8261075E-03
70500.00	-99.40000	1.300000	4.9261075E-03
71000.00	-98.30000	1.200000	4.5043672E-03
71500.00	-97.20000	1.200000	4.5043672E-03
72000.00	-96.10000	1.200000	4.5043672E-03
72500.00	-95.10000	1.200000	4.1826265E-03
73000.00	-94.10000	1.100000	4.1826265E-03
73055.00	-94.00000	1.100000	4.1826265E-03
73500.00	-94.10000	1.100000	3.8608862E-03
74000.00	-94.30000	1.100000	3.8608862E-03
74500.00	-94.40000	1.100000	3.8608862E-03
75000.00	-94.50000	1.000000	3.8608862E-03
75500.00	-94.60000	1.000000	3.5391452E-03
76000.00	-94.80000	0.9800000	3.5391452E-03
76500.00	-94.90000	0.9600000	3.5391452E-03
77000.00	-95.00000	0.9400000	3.5391452E-03
77500.00	-95.20000	0.9100000	3.2174047E-03
78000.00	-95.30000	0.8900000	3.2174047E-03
78500.00	-95.50000	0.8700000	3.2174047E-03
79000.00	-95.60000	0.8500000	3.2174047E-03
79500.00	-95.70000	0.8300000	2.8956642E-03
80000.00	-95.90000	0.8100000	2.8956642E-03
80500.00	-96.00000	0.7900000	2.8956642E-03
81000.00	-96.20000	0.7700000	2.8956642E-03
81500.00	-96.40000	0.7500000	2.8956642E-03
82000.00	-96.60000	0.7400000	2.5739241E-03
82500.00	-96.80000	0.7200000	2.5739241E-03
83000.00	-97.00000	0.7000000	2.5739241E-03
83500.00	-97.20000	0.6800000	2.5739241E-03
84000.00	-97.40000	0.6700000	2.5739241E-03
84500.00	-97.60000	0.6500000	2.2521836E-03
85000.00	-97.80000	0.6400000	2.2521836E-03
85500.00	-98.00000	0.6200000	2.2521836E-03
86000.00	-98.20000	0.6100000	2.2521836E-03
86500.00	-98.30000	0.5900000	2.2521836E-03

87000.00	-98.50000	0.5800000	2.2521836E-03
87500.00	-98.70000	0.5700000	1.9304431E-03
88000.00	-98.90000	0.5500000	1.9304431E-03
88500.00	-99.10000	0.5400000	1.9304431E-03
89000.00	-99.30000	0.5300000	1.9304431E-03
89500.00	-99.50000	0.5200000	1.9304431E-03
90000.00	-99.70000	0.5000000	1.9304431E-03
90500.00	-99.90000	0.4900000	1.9304431E-03
91000.00	-100.1000	0.4800000	1.9304431E-03
91500.00	-100.3000	0.4700000	1.6087024E-03
92000.00	-100.5000	0.4600000	1.6087024E-03
92500.00	-100.7000	0.4500000	1.6087024E-03
93000.00	-100.9000	0.4400000	1.6087024E-03
93500.00	-101.1000	0.4300000	1.6087024E-03
94000.00	-101.3000	0.4200000	1.6087024E-03
94500.00	-101.5000	0.4100000	1.6087024E-03
95000.00	-101.7000	0.4000000	1.6087024E-03
95500.00	-101.9000	0.3900000	1.6087024E-03
96000.00	-102.1000	0.3800000	1.2869621E-03
96500.00	-102.3000	0.3700000	1.2869621E-03
97000.00	-102.6000	0.3700000	1.2869621E-03
97500.00	-102.8000	0.3600000	1.2869621E-03
98000.00	-103.0000	0.3500000	1.2869621E-03
98500.00	-103.2000	0.3400000	1.2869621E-03
99000.00	-103.4000	0.3300000	1.2869621E-03
99500.00	-103.7000	0.3300000	1.2869621E-03
100000.0	-103.9000	0.3200000	1.2869621E-03

MIL STD 210A  
HOT ATMOSPHERE

ALTITUDE ft	TEMPERATURE F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.000000E+00	103.0000	29.90000	7.0461169E-02
500.0000	101.1000	29.40000	6.9495946E-02
1000.000	99.20000	28.90000	6.8530723E-02
1500.000	97.30000	28.30000	6.7565501E-02
2000.000	95.40000	27.80000	6.6600285E-02
2500.000	93.40000	27.30000	6.5635063E-02
3000.000	91.50000	26.80000	6.4669840E-02
3500.000	89.60000	26.30000	6.3704617E-02
4000.000	87.60000	25.80000	6.2739395E-02
4500.000	85.70000	25.40000	6.1774179E-02
5000.000	83.70000	24.90000	6.0808953E-02
5500.000	81.70000	24.40000	5.9843730E-02
6000.000	79.80000	24.00000	5.8878507E-02
6500.000	77.80000	23.50000	5.8235027E-02
7000.000	75.80000	23.10000	5.7269808E-02
7500.000	73.80000	22.70000	5.6304585E-02
8000.000	71.80000	22.20000	5.5339366E-02
8500.000	69.80000	21.80000	5.4695882E-02
9000.000	67.80000	21.40000	5.3730659E-02
9500.000	65.80000	21.00000	5.3087182E-02
10000.00	63.90000	20.60000	5.2121960E-02
10500.00	62.00000	20.20000	5.1478475E-02
11000.00	60.20000	19.80000	5.0513256E-02
11500.00	58.30000	19.40000	4.9869776E-02
12000.00	56.40000	19.00000	4.8904553E-02
12500.00	54.50000	18.70000	4.8261076E-02
13000.00	52.60000	18.30000	4.7295853E-02
13500.00	50.70000	17.90000	4.6652369E-02
14000.00	48.80000	17.60000	4.6008892E-02
14500.00	46.80000	17.20000	4.5043670E-02
15000.00	44.90000	16.90000	4.4400185E-02
15500.00	43.00000	16.50000	4.3756709E-02
16000.00	41.00000	16.20000	4.3113228E-02
16500.00	39.00000	15.90000	4.2148005E-02
17000.00	37.10000	15.60000	4.1504521E-02
17500.00	35.10000	15.30000	4.0861044E-02
18000.00	33.10000	14.90000	4.0217564E-02
18500.00	31.20000	14.60000	3.9574083E-02
19000.00	29.20000	14.30000	3.8930599E-02
19500.00	27.30000	14.00000	3.8287118E-02
20000.00	25.50000	13.80000	3.7643638E-02
20500.00	23.60000	13.50000	3.7000157E-02
21000.00	21.80000	13.20000	3.6356676E-02
21500.00	19.90000	12.90000	3.5713196E-02
22000.00	18.00000	12.60000	3.5069715E-02
22500.00	16.20000	12.40000	3.4426235E-02
23000.00	14.30000	12.10000	3.3782750E-02
23500.00	12.40000	11.80000	3.3461012E-02
24000.00	10.50000	11.60000	3.2817531E-02
24500.00	8.600000	11.30000	3.2174051E-02
25000.00	6.700000	11.10000	3.1530570E-02
25500.00	4.800000	10.90000	3.0887090E-02
26000.00	2.900000	10.60000	3.0565348E-02
26500.00	1.000000	10.40000	2.9921865E-02
27000.00	-1.000000	10.20000	2.9278383E-02
27500.00	-2.900000	9.900000	2.8956644E-02
28000.00	-4.900000	9.700000	2.8313162E-02

28500.00	-6.800000	9.500000	2.7991422E-02
29000.00	-8.700000	9.300000	2.7347941E-02
29500.00	-10.50000	9.100000	2.6704459E-02
30000.00	-12.30000	8.900000	2.6382720E-02
30500.00	-14.10000	8.700000	2.5739238E-02
31000.00	-15.90000	8.500000	2.5417499E-02
31500.00	-17.70000	8.300000	2.4774017E-02
32000.00	-19.50000	8.100000	2.4452277E-02
32500.00	-21.30000	7.900000	2.4130538E-02
33000.00	-23.20000	7.700000	2.3487056E-02
33500.00	-25.00000	7.600000	2.3165314E-02
34000.00	-26.80000	7.400000	2.2521835E-02
34500.00	-28.40000	7.200000	2.2200093E-02
35000.00	-30.10000	7.000000	2.1878354E-02
35500.00	-31.80000	6.900000	2.1234872E-02
36000.00	-33.40000	6.700000	2.0913132E-02
36500.00	-35.00000	6.600000	2.0591393E-02
37000.00	-36.70000	6.400000	1.9947911E-02
37500.00	-38.40000	6.200000	1.9626170E-02
38000.00	-40.10000	6.100000	1.9304430E-02
38500.00	-41.80000	6.000000	1.8982690E-02
39000.00	-43.50000	5.800000	1.8660948E-02
39400.00	-45.00000	5.700000	1.8339209E-02
39500.00	-45.00000	5.700000	1.8017469E-02
40000.00	-44.80000	5.500000	1.7695727E-02
40500.00	-44.60000	5.400000	1.7373987E-02
41000.00	-44.30000	5.300000	1.6730506E-02
41500.00	-44.10000	5.200000	1.6408766E-02
42000.00	-43.90000	5.000000	1.6087025E-02
42500.00	-43.70000	4.900000	1.5765285E-02
43000.00	-43.50000	4.800000	1.5443545E-02
43500.00	-43.30000	4.700000	1.4800062E-02
44000.00	-43.10000	4.600000	1.4478322E-02
44500.00	-42.90000	4.500000	1.4156581E-02
45000.00	-42.60000	4.400000	1.3834842E-02
45500.00	-42.40000	4.300000	1.3513100E-02
46000.00	-42.10000	4.200000	1.3191360E-02
46500.00	-41.90000	4.100000	1.2869619E-02
47000.00	-41.70000	4.000000	1.2547879E-02
47500.00	-41.40000	3.900000	1.2226138E-02
48000.00	-41.20000	3.800000	1.1904398E-02
48500.00	-40.90000	3.700000	1.1582657E-02
49000.00	-40.70000	3.600000	1.1260917E-02
49500.00	-40.40000	3.500000	1.1260917E-02
50000.00	-40.20000	3.400000	1.0939177E-02
50400.00	-40.20000	3.300000	1.0617436E-02
50500.00	-40.20000	3.300000	1.0617436E-02
51000.00	-39.90000	3.300000	1.0295697E-02
51500.00	-39.80000	3.200000	9.9739553E-03
52000.00	-39.70000	3.100000	9.9739553E-03
52500.00	-39.60000	3.000000	9.6522151E-03
53000.00	-39.50000	3.000000	9.3304738E-03
53500.00	-39.40000	2.900000	9.0087345E-03
54000.00	-39.30000	2.800000	9.0087345E-03
54500.00	-39.20000	2.800000	8.6869933E-03
55000.00	-39.10000	2.700000	8.3652530E-03
55500.00	-39.00000	2.600000	8.3652530E-03
56000.00	-39.00000	2.600000	8.0435127E-03
56500.00	-38.90000	2.500000	8.0435127E-03
57000.00	-38.80000	2.400000	7.7217724E-03
57500.00	-38.70000	2.400000	7.4000312E-03
58000.00	-38.60000	2.300000	7.4000312E-03

58500.00	-38.50000	2.300000	7.0782905E-03
59000.00	-38.40000	2.200000	7.0782905E-03
59500.00	-38.30000	2.200000	6.7565502E-03
60000.00	-38.20000	2.100000	6.7565502E-03
60500.00	-38.10000	2.100000	6.4348094E-03
61000.00	-38.00000	2.000000	6.4348094E-03
61500.00	-37.90000	2.000000	6.1130691E-03
62000.00	-37.80000	1.900000	6.1130691E-03
62500.00	-37.70000	1.900000	5.7913284E-03
63000.00	-37.60000	1.800000	5.7913284E-03
63500.00	-37.50000	1.800000	5.4695886E-03
64000.00	-37.40000	1.700000	5.4695886E-03
64500.00	-37.30000	1.700000	5.4695886E-03
65000.00	-37.20000	1.700000	5.1478483E-03
65500.00	-37.10000	1.600000	5.1478483E-03
66000.00	-37.10000	1.600000	4.8261075E-03
66400.00	-37.00000	1.600000	4.8261075E-03
66500.00	-37.00000	1.500000	4.8261075E-03
67000.00	-36.70000	1.500000	4.8261075E-03
67500.00	-36.40000	1.500000	4.5043672E-03
68000.00	-36.10000	1.400000	4.5043672E-03
68500.00	-35.80000	1.400000	4.5043672E-03
69000.00	-35.50000	1.400000	4.1826265E-03
69500.00	-35.10000	1.300000	4.1826265E-03
70000.00	-34.70000	1.300000	4.1826265E-03
70500.00	-34.40000	1.300000	3.8608862E-03
71000.00	-34.00000	1.200000	3.8608862E-03
71500.00	-33.70000	1.200000	3.8608862E-03
72000.00	-33.30000	1.200000	3.8608862E-03
72500.00	-33.00000	1.200000	3.5391452E-03
73000.00	-32.60000	1.100000	3.5391452E-03
73500.00	-32.30000	1.100000	3.5391452E-03
74000.00	-31.90000	1.100000	3.2174047E-03
74500.00	-31.60000	1.000000	3.2174047E-03
75000.00	-31.20000	1.000000	3.2174047E-03
75500.00	-30.80000	1.000000	3.2174047E-03
76000.00	-30.50000	0.9800000	2.8956642E-03
76500.00	-30.10000	0.9600000	2.8956642E-03
77000.00	-29.80000	0.9400000	2.8956642E-03
77500.00	-29.50000	0.9100000	2.8956642E-03
78000.00	-29.10000	0.8900000	2.8956642E-03
78500.00	-28.80000	0.8700000	2.5739241E-03
79000.00	-28.40000	0.8500000	2.5739241E-03
79500.00	-28.00000	0.8300000	2.5739241E-03
80000.00	-27.70000	0.8100000	2.5739241E-03
80500.00	-27.30000	0.7900000	2.5739241E-03
81000.00	-26.90000	0.7700000	2.2521836E-03
81500.00	-26.50000	0.7500000	2.2521836E-03
82000.00	-26.10000	0.7400000	2.2521836E-03
82500.00	-25.80000	0.7200000	2.2521836E-03
83000.00	-25.40000	0.7000000	2.2521836E-03
83500.00	-25.00000	0.6800000	1.9304431E-03
84000.00	-24.60000	0.6700000	1.9304431E-03
84500.00	-24.20000	0.6500000	1.9304431E-03
85000.00	-23.80000	0.6400000	1.9304431E-03
85500.00	-23.40000	0.6200000	1.9304431E-03
86000.00	-23.00000	0.6100000	1.9304431E-03
86500.00	-22.60000	0.5900000	1.9304431E-03
87000.00	-22.20000	0.5800000	1.6087024E-03
87500.00	-21.80000	0.5700000	1.6087024E-03
88000.00	-21.30000	0.5500000	1.6087024E-03
88500.00	-20.90000	0.5400000	1.6087024E-03

89000.00	-20.50000	0.5300000	1.6087024E-03
89500.00	-20.10000	0.5200000	1.6087024E-03
90000.00	-19.80000	0.5000000	1.6087024E-03
90500.00	-19.40000	0.4900000	1.6087024E-03
91000.00	-19.10000	0.4800000	1.6087024E-03
91500.00	-18.70000	0.4700000	1.2869621E-03
92000.00	-18.30000	0.4600000	1.2869621E-03
92500.00	-18.00000	0.4500000	1.2869621E-03
93000.00	-17.60000	0.4400000	1.2869621E-03
93500.00	-17.20000	0.4300000	1.2869621E-03
94000.00	-16.80000	0.4200000	1.2869621E-03
94500.00	-16.40000	0.4100000	1.2869621E-03
95000.00	-15.90000	0.4000000	1.2869621E-03
95500.00	-15.50000	0.3900000	1.2869621E-03
96000.00	-15.10000	0.3800000	1.2869621E-03
96500.00	-14.70000	0.3700000	9.6522155E-04
97000.00	-14.30000	0.3700000	9.6522155E-04
97500.00	-13.80000	0.3600000	9.6522155E-04
98000.00	-13.40000	0.3500000	9.6522155E-04
98500.00	-12.90000	0.3400000	9.6522155E-04
99000.00	-12.50000	0.3300000	9.6522155E-04
99500.00	-12.00000	0.3300000	9.6522155E-04
100000.0	-11.60000	0.3200000	9.6522155E-04

MIL STD 210A  
POLAR ATMOSPHERE

ALTITUDE ft	TEMPERATURE F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.000000E+00	-15.70000	29.92000	8.9411691E-02
500.0000	-14.20000	29.38000	8.7513417E-02
1000.000	-12.70000	28.86000	8.5647322E-02
1500.000	-11.20000	28.33000	8.3813399E-02
2000.000	-9.600000	27.82000	8.2011655E-02
2500.000	-8.100000	27.32000	8.0274254E-02
3000.000	-6.600000	26.82000	7.8536853E-02
3243.000	-5.800000	26.58000	7.7700332E-02
3500.000	-5.900000	26.33000	7.6992497E-02
4000.000	-6.200000	25.84000	7.5609013E-02
4500.000	-6.500000	25.37000	7.4257709E-02
5000.000	-6.700000	24.90000	7.2938569E-02
5500.000	-7.000000	24.43000	7.1619436E-02
6000.000	-7.300000	23.98000	7.0332475E-02
6500.000	-7.500000	23.53000	6.9045514E-02
7000.000	-7.800000	23.09000	6.7790724E-02
7500.000	-8.100000	22.65000	6.6568106E-02
8000.000	-8.400000	22.22000	6.5345496E-02
8500.000	-8.600000	21.80000	6.4155057E-02
9000.000	-8.900000	21.39000	6.2964618E-02
9500.000	-9.200000	20.98000	6.1806351E-02
9882.000	-9.400000	20.67000	6.0905475E-02
10000.00	-9.700000	20.58000	6.0680259E-02
10500.00	-11.10000	20.18000	5.9715033E-02
11000.00	-12.50000	19.79000	5.8717642E-02
11500.00	-14.00000	19.41000	5.7784591E-02
12000.00	-15.40000	19.03000	5.6819368E-02
12500.00	-16.80000	18.66000	5.5886324E-02
13000.00	-18.20000	18.29000	5.4985452E-02
13500.00	-19.60000	17.93000	5.4052401E-02
14000.00	-21.00000	17.58000	5.3183705E-02
14500.00	-22.40000	17.23000	5.2282829E-02
15000.00	-23.80000	16.89000	5.1414128E-02
15500.00	-25.30000	16.55000	5.0545435E-02
16000.00	-26.70000	16.22000	4.9676731E-02
16500.00	-28.10000	15.89000	4.8840210E-02
17000.00	-29.50000	15.57000	4.8035856E-02
17500.00	-30.90000	15.25000	4.7199331E-02
18000.00	-32.30000	14.94000	4.6394978E-02
18500.00	-33.80000	14.63000	4.5590628E-02
19000.00	-35.20000	14.34000	4.4818453E-02
19500.00	-36.60000	14.04000	4.4046272E-02
20000.00	-38.00000	13.75000	4.3274097E-02
20500.00	-39.50000	13.46000	4.2501923E-02
21000.00	-40.90000	13.18000	4.1761920E-02
21500.00	-42.30000	12.91000	4.1021913E-02
22000.00	-43.70000	12.64000	4.0314090E-02
22500.00	-45.20000	12.37000	3.9606255E-02
23000.00	-46.60000	12.11000	3.8898423E-02
23500.00	-48.00000	11.85000	3.8190596E-02
24000.00	-49.40000	11.60000	3.7514940E-02
24500.00	-50.90000	11.35000	3.6839288E-02
25000.00	-52.30000	11.10000	3.6163632E-02
25500.00	-53.70000	10.86000	3.5520151E-02
26000.00	-55.20000	10.63000	3.4876671E-02
26500.00	-56.60000	10.40000	3.4233190E-02
27000.00	-58.00000	10.17000	3.3589710E-02

27500.00	-59.50000	9.940000	3.2978401E-02
28000.00	-60.90000	9.720000	3.2367095E-02
28500.00	-62.40000	9.510000	3.1755790E-02
29000.00	-63.80000	9.300000	3.1163780E-02
29500.00	-65.20000	9.090000	3.0578220E-02
30000.00	-66.70000	8.890000	2.9999083E-02
30065.00	-67.00000	8.860000	2.9934740E-02
30500.00	-67.10000	8.690000	2.9355600E-02
31000.00	-67.20000	8.490000	2.8699247E-02
31500.00	-67.40000	8.300000	2.8055768E-02
32000.00	-67.50000	8.110000	2.7421940E-02
32500.00	-67.60000	7.920000	2.6800979E-02
33000.00	-67.70000	7.740000	2.6192892E-02
33500.00	-67.90000	7.560000	2.5594464E-02
34000.00	-68.00000	7.380000	2.5008889E-02
34500.00	-68.10000	7.210000	2.4432968E-02
35000.00	-68.30000	7.040000	2.3866711E-02
35500.00	-68.40000	6.870000	2.3313319E-02
36000.00	-68.50000	6.710000	2.2766361E-02
36500.00	-68.60000	6.550000	2.2235477E-02
37000.00	-68.80000	6.400000	2.1714270E-02
37500.00	-68.90000	6.250000	2.1205919E-02
38000.00	-69.00000	6.100000	2.0707218E-02
38500.00	-69.20000	5.950000	2.0224612E-02
39000.00	-69.30000	5.810000	1.9751651E-02
39500.00	-69.40000	5.670000	1.9208339E-02
40000.00	-69.60000	5.540000	1.8834688E-02
40500.00	-69.70000	5.410000	1.8393900E-02
41000.00	-69.80000	5.280000	1.7962772E-02
41500.00	-70.00000	5.150000	1.7544510E-02
42000.00	-70.10000	5.030000	1.7132681E-02
42500.00	-70.20000	4.910000	1.6730512E-02
43000.00	-70.30000	4.790000	1.6337981E-02
43500.00	-70.50000	4.680000	1.5958332E-02
44000.00	-70.60000	4.570000	1.5581888E-02
44500.00	-70.70000	4.460000	1.5218318E-02
45000.00	-70.90000	4.350000	1.4861191E-02
45500.00	-71.00000	4.250000	1.4513711E-02
46000.00	-71.10000	4.150000	1.4172669E-02
46500.00	-71.30000	4.050000	1.3841284E-02
47000.00	-71.40000	3.960000	1.3516321E-02
47500.00	-71.50000	3.860000	1.3201009E-02
48000.00	-71.60000	3.770000	1.4179101E-02
48500.00	-71.80000	3.680000	1.2589699E-02
49000.00	-71.90000	3.590000	1.2296918E-02
49500.00	-72.00000	3.510000	1.2007352E-02
50000.00	-72.20000	3.420000	1.1727440E-02
50500.00	-72.30000	3.340000	1.1450741E-02
51000.00	-72.40000	3.260000	1.1183700E-02
51500.00	-72.50000	3.190000	1.0919869E-02
52000.00	-72.70000	3.110000	1.0665701E-02
52500.00	-72.80000	3.040000	1.0414740E-02
53000.00	-72.90000	2.960000	1.0173431E-02
53500.00	-73.10000	2.890000	9.9353464E-03
54000.00	-73.20000	2.830000	9.7004762E-03
54500.00	-73.30000	2.760000	9.4752572E-03
55000.00	-73.50000	2.690000	9.2532560E-03
55500.00	-73.60000	2.630000	9.0344725E-03
56000.00	-73.70000	2.570000	8.8253412E-03
56500.00	-73.80000	2.510000	8.6162100E-03
57000.00	-74.00000	2.450000	8.4167309E-03
57500.00	-74.10000	2.390000	8.2172519E-03

58000.00	-74.20000	2.330000	8.0274250E-03
58500.00	-74.40000	2.280000	7.8375982E-03
59000.00	-74.50000	2.220000	7.6542064E-03
59500.00	-74.60000	2.170000	7.4740313E-03
60000.00	-74.70000	2.120000	7.3002917E-03
60500.00	-74.90000	2.070000	7.1297693E-03
61000.00	-75.00000	2.020000	6.9624647E-03
61500.00	-75.10000	1.970000	6.7983763E-03
62000.00	-75.30000	1.920000	6.6407239E-03
62500.00	-75.40000	1.880000	6.4830710E-03
63000.00	-75.50000	1.830000	6.3318531E-03
63500.00	-75.60000	1.790000	6.1838524E-03
64000.00	-75.80000	1.750000	6.0390695E-03
64500.00	-75.90000	1.710000	5.8975033E-03
65000.00	-76.00000	1.670000	5.7591544E-03
65500.00	-76.20000	1.630000	5.6240242E-03
66000.00	-76.30000	1.590000	5.4921098E-03
66500.00	-76.40000	1.550000	5.3634136E-03
67000.00	-76.50000	1.510000	5.2379351E-03
67500.00	-76.70000	1.480000	5.1156743E-03
68000.00	-76.80000	1.440000	4.9966299E-03
68500.00	-76.90000	1.410000	4.8808032E-03
69000.00	-77.10000	1.370000	4.7649764E-03
69500.00	-77.20000	1.340000	4.6523674E-03
70000.00	-77.30000	1.310000	4.5461934E-03
70500.00	-77.40000	1.280000	4.4368012E-03
71000.00	-77.60000	1.250000	4.3338444E-03
71500.00	-77.70000	1.220000	4.2341049E-03
72000.00	-77.80000	1.190000	4.1343654E-03
72500.00	-78.00000	1.160000	4.0378436E-03
73000.00	-78.10000	1.130000	3.9413213E-03
73500.00	-78.20000	1.110000	3.8512337E-03
74000.00	-78.30000	1.080000	3.7611465E-03
74500.00	-78.50000	1.050000	3.6710589E-03
75000.00	-78.60000	1.030000	3.5841891E-03
75500.00	-78.70000	1.010000	3.5005368E-03
76000.00	-78.80000	0.9820000	3.4201017E-03
76500.00	-79.00000	0.9580000	3.3396664E-03
77000.00	-79.10000	0.9350000	3.2624486E-03
77500.00	-79.20000	0.9130000	3.1852310E-03
78000.00	-79.40000	0.8920000	3.1105869E-03
78500.00	-79.50000	0.8700000	3.0375523E-03
79000.00	-79.60000	0.8500000	2.9664473E-03
79500.00	-79.70000	0.8300000	2.8969510E-03
80000.00	-79.90000	0.8100000	2.8293859E-03
80500.00	-80.00000	0.7810000	2.7631072E-03
81000.00	-80.10000	0.7720000	2.6984378E-03
81500.00	-80.20000	0.7540000	2.6350552E-03
82000.00	-80.40000	0.7360000	2.5732801E-03
82500.00	-80.50000	0.7180000	2.5131151E-03
83000.00	-80.60000	0.7010000	2.4545579E-03
83500.00	-80.70000	0.6850000	2.3972888E-03
84000.00	-80.90000	0.6680000	2.3416271E-03
84500.00	-81.00000	0.6530000	2.2872528E-03
85000.00	-81.10000	0.6370000	2.2341660E-03
85500.00	-81.30000	0.6230000	2.1826872E-03
86000.00	-81.40000	0.6080000	2.1321739E-03
86092.00	-81.40000	0.6050000	2.1234869E-03
86500.00	-81.40000	0.5940000	2.0826259E-03
87000.00	-81.40000	0.5800000	2.0340441E-03
87500.00	-81.40000	0.5660000	1.9867481E-03
88000.00	-81.40000	0.5530000	1.9407390E-03

88500.00	-81.40000	0.5400000	1.8960170E-03
89000.00	-81.40000	0.5280000	1.8522600E-03
89500.00	-81.40000	0.5160000	1.8094680E-03
90000.00	-81.40000	0.5040000	1.7679641E-03
90500.00	-81.40000	0.4920000	1.7271030E-03
91000.00	-81.40000	0.4810000	1.6875289E-03
91500.00	-81.40000	0.4700000	1.6492420E-03
92000.00	-81.40000	0.4590000	1.6115982E-03
92500.00	-81.40000	0.4490000	1.5745979E-03
93000.00	-81.40000	0.4390000	1.5388848E-03
93500.00	-81.40000	0.4290000	1.5041371E-03
94000.00	-81.40000	0.4190000	1.4700320E-03
94500.00	-81.40000	0.4100000	1.4368930E-03
95000.00	-81.40000	0.4000000	1.4043972E-03
95500.00	-81.40000	0.3910000	1.3728670E-03
96000.00	-81.40000	0.3830000	1.3419798E-03
96500.00	-81.40000	0.3740000	1.3120580E-03
97000.00	-81.40000	0.3660000	1.2824580E-03
97500.00	-81.40000	0.3570000	1.2538231E-03
98000.00	-81.40000	0.3500000	1.2258310E-03
98500.00	-81.40000	0.3420000	1.1988051E-03
99000.00	-81.40000	0.3340000	1.1721009E-03
99500.00	-81.40000	0.3270000	1.1460399E-03
100000.0	-81.40000	0.3200000	1.1206222E-03

MIL STD 210A  
TROPICAL ATMOSPHERE

ALTITUDE ft	TEMPERATURE °	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.000000E+00	89.80000	29.92000	7.2262913E-02
500.0000	87.80000	29.38000	7.1201175E-02
1000.000	85.90000	28.85000	7.0171602E-02
1500.000	84.00000	28.33000	6.9142029E-02
2000.000	82.00000	27.82000	6.8144634E-02
2500.000	80.10000	27.31000	6.7147240E-02
3000.000	78.10000	26.82000	6.6149846E-02
3500.000	76.20000	26.32000	6.5184623E-02
4000.000	74.30000	25.84000	6.4219400E-02
4500.000	72.30000	25.36000	6.3254185E-02
5000.000	70.40000	24.89000	6.2321134E-02
5500.000	68.40000	24.43000	6.1388087E-02
6000.000	66.50000	23.98000	6.0455039E-02
6500.000	64.60000	23.53000	5.9554167E-02
7000.000	62.60000	23.09000	5.8653291E-02
7500.000	60.70000	22.65000	5.7752419E-02
8000.000	58.70000	22.22000	5.6883715E-02
8500.000	56.80000	21.80000	5.6015018E-02
9000.000	54.90000	21.39000	5.5146318E-02
9500.000	52.90000	20.98000	5.4309793E-02
10000.00	51.00000	20.58000	5.3473268E-02
10500.00	49.10000	20.18000	5.2636743E-02
11000.00	47.10000	19.79000	5.1800217E-02
11500.00	45.20000	19.41000	5.0995871E-02
12000.00	43.20000	19.03000	5.0191518E-02
12500.00	41.30000	18.66000	4.9419340E-02
13000.00	39.40000	18.29000	4.8647162E-02
13500.00	37.40000	17.93000	4.7874983E-02
14000.00	35.50000	17.58000	4.7102809E-02
14500.00	33.60000	17.23000	4.6330627E-02
15000.00	31.60000	16.89000	4.5590628E-02
15500.00	29.70000	16.55000	4.4882804E-02
16000.00	27.80000	16.22000	4.4142794E-02
16500.00	25.80000	15.89000	4.3434966E-02
17000.00	23.90000	15.57000	4.2727135E-02
17500.00	21.90000	15.25000	4.2019311E-02
18000.00	20.00000	14.94000	4.1343655E-02
18500.00	18.10000	14.64000	4.0635828E-02
19000.00	16.10000	14.34000	3.9960168E-02
19500.00	14.20000	14.04000	3.9316688E-02
20000.00	12.30000	13.75000	3.8641032E-02
20500.00	10.30000	13.46000	3.7997555E-02
21000.00	8.400000	13.18000	3.7354071E-02
21500.00	6.500000	12.91000	3.6742765E-02
22000.00	4.500000	12.64000	3.6131456E-02
22500.00	2.600000	12.37000	3.5487976E-02
23000.00	0.7000000	12.11000	3.4908842E-02
23500.00	-1.300000	11.85000	3.4297537E-02
24000.00	-3.200000	11.60000	3.3718403E-02
24500.00	-5.100000	11.35000	3.3139274E-02
25000.00	-7.000000	11.10000	3.2560140E-02
25500.00	-9.000000	10.86000	3.1981006E-02
26000.00	-10.90000	10.63000	3.1421173E-02
26500.00	-12.80000	10.40000	3.0867783E-02
27000.00	-14.80000	10.17000	3.0324042E-02
27500.00	-16.70000	9.940000	2.9786734E-02
28000.00	-18.60000	9.720000	2.9255861E-02

28500.00	-20.60000	9.510000	2.8731424E-02
29000.00	-22.50000	9.300000	2.8216641E-02
29500.00	-24.40000	9.090000	2.7708292E-02
30000.00	-26.30000	8.890000	2.7206376E-02
30500.00	-28.30000	8.680000	2.6710896E-02
31000.00	-30.20000	8.490000	2.6225068E-02
31500.00	-32.10000	8.290000	2.5742456E-02
32000.00	-34.10000	8.110000	2.5269497E-02
32500.00	-36.00000	7.920000	2.4799757E-02
33000.00	-37.90000	7.740000	2.4339668E-02
33500.00	-39.80000	7.560000	2.3886014E-02
34000.00	-41.80000	7.380000	2.3438795E-02
34500.00	-43.70000	7.210000	2.2998011E-02
35000.00	-45.60000	7.040000	2.2560444E-02
35500.00	-47.60000	6.870000	2.2132531E-02
36000.00	-49.50000	6.710000	2.1711046E-02
36500.00	-51.40000	6.550000	2.1296002E-02
37000.00	-53.30000	6.400000	2.0887394E-02
37500.00	-55.20000	6.240000	2.0488434E-02
38000.00	-57.10000	6.100000	2.0095911E-02
38500.00	-59.00000	5.950000	1.9709824E-02
39000.00	-60.90000	5.810000	1.9333387E-02
39500.00	-62.80000	5.670000	1.8963385E-02
40000.00	-64.60000	5.540000	1.8599818E-02
40500.00	-66.50000	5.410000	1.8242685E-02
41000.00	-68.30000	5.280000	1.7895207E-02
41500.00	-70.10000	5.150000	1.7550943E-02
42000.00	-72.00000	5.030000	1.7216332E-02
42500.00	-73.80000	4.910000	1.6884942E-02
43000.00	-75.60000	4.790000	1.6563199E-02
43500.00	-77.40000	4.680000	1.6244678E-02
44000.00	-79.20000	4.570000	1.5932590E-02
44500.00	-81.00000	4.460000	1.5630152E-02
45000.00	-82.80000	4.350000	1.5330935E-02
45500.00	-84.50000	4.250000	1.5034933E-02
46000.00	-86.30000	4.150000	1.4748584E-02
46500.00	-88.00000	4.050000	1.4465452E-02
47000.00	-89.80000	3.960000	1.4188755E-02
47500.00	-91.50000	3.860000	1.3918494E-02
48000.00	-93.20000	3.770000	1.3651448E-02
48500.00	-94.90000	3.680000	1.3390840E-02
49000.00	-96.70000	3.590000	1.3133448E-02
49500.00	-98.40000	3.510000	1.2882490E-02
50000.00	-100.1000	3.420000	1.2634749E-02
50500.00	-101.7000	3.340000	1.2393444E-02
51000.00	-103.4000	3.260000	1.2155357E-02
51500.00	-105.1000	3.190000	1.1923703E-02
52000.00	-106.8000	3.110000	1.1695267E-02
52500.00	-108.4000	3.040000	1.1470049E-02
53000.00	-110.1000	2.960000	1.1251265E-02
53500.00	-111.7000	2.890000	1.1035698E-02
53595.00	-112.0000	2.880000	1.0997090E-02
54000.00	-111.1000	2.830000	1.0755785E-02
54500.00	-110.1000	2.760000	1.0469436E-02
55000.00	-109.0000	2.690000	1.0189521E-02
55500.00	-107.9000	2.630000	9.9160420E-03
56000.00	-106.8000	2.570000	9.6522151E-03
56500.00	-105.7000	2.510000	9.3948226E-03
57000.00	-104.6000	2.450000	9.1406479E-03
57500.00	-103.5000	2.390000	8.8961245E-03
58000.00	-102.5000	2.330000	8.6580366E-03
58500.00	-101.4000	2.280000	8.4263831E-03

59000.00	-100.2000	2.220000	8.2011651E-03
59500.00	-99.10000	2.170000	7.9823816E-03
60000.00	-98.00000	2.120000	7.7700336E-03
60500.00	-96.90000	2.070000	7.5609018E-03
61000.00	-95.80000	2.020000	7.3582055E-03
61500.00	-94.70000	1.970000	7.1619437E-03
62000.00	-93.60000	1.920000	6.9721169E-03
62500.00	-92.40000	1.880000	6.7855073E-03
63000.00	-91.30000	1.830000	6.6021150E-03
63500.00	-90.20000	1.790000	6.4283754E-03
64000.00	-89.00000	1.750000	6.2546353E-03
64500.00	-87.90000	1.710000	6.0073306E-03
65000.00	-86.70000	1.670000	5.9264600E-03
65500.00	-85.60000	1.630000	5.7655899E-03
66000.00	-84.40000	1.590000	5.6111543E-03
66500.00	-83.30000	1.550000	5.4631536E-03
67000.00	-82.10000	1.510000	5.3151525E-03
67500.00	-81.00000	1.480000	5.1735872E-03
68000.00	-79.80000	1.440000	5.0352388E-03
68500.00	-78.60000	1.410000	4.9001076E-03
69000.00	-77.50000	1.370000	4.7714114E-03
69500.00	-76.30000	1.340000	4.6427157E-03
69620.00	-76.00000	1.330000	4.6137585E-03
70000.00	-75.50000	1.310000	4.5236712E-03
70500.00	-74.80000	1.280000	4.4078450E-03
71000.00	-74.10000	1.250000	4.2952355E-03
71500.00	-73.40000	1.220000	4.1858437E-03
72000.00	-72.80000	1.190000	4.0796692E-03
72500.00	-72.10000	1.160000	3.9767125E-03
73000.00	-71.40000	1.130000	3.8737557E-03
73500.00	-70.70000	1.110000	3.7740162E-03
74000.00	-70.00000	1.080000	3.6807111E-03
74500.00	-69.30000	1.050000	3.5041891E-03
75000.00	-68.60000	1.030000	3.4941018E-03
75500.00	-67.90000	1.010000	3.4040145E-03
76000.00	-67.20000	0.9810000	3.3171445E-03
76500.00	-66.60000	0.9580000	3.2334917E-03
77000.00	-65.90000	0.9350000	3.1517700E-03
77500.00	-65.20000	0.9130000	3.0716565E-03
78000.00	-64.50000	0.8910000	2.9931518E-03
78500.00	-63.80000	0.8700000	2.9168993E-03
79000.00	-63.10000	0.8500000	2.8425774E-03
79500.00	-62.40000	0.8300000	2.7701857E-03
80000.00	-61.70000	0.8100000	2.6997246E-03
80500.00	-61.00000	0.7910000	2.6308722E-03
81000.00	-60.20000	0.7720000	2.5639501E-03
81500.00	-59.50000	0.7530000	2.4986367E-03
82000.00	-58.80000	0.7360000	2.4349319E-03
82500.00	-58.10000	0.7180000	2.3728362E-03
83000.00	-57.40000	0.7010000	2.3126707E-03
83500.00	-56.70000	0.6850000	2.2541138E-03
84000.00	-56.00000	0.6680000	2.1971657E-03
84500.00	-55.30000	0.6530000	2.1415048E-03
85000.00	-54.60000	0.6370000	2.0877740E-03
85500.00	-53.90000	0.6220000	2.0353303E-03
86000.00	-53.20000	0.6080000	1.9841737E-03
86500.00	-52.50000	0.5940000	1.9346256E-03
87000.00	-51.80000	0.5800000	1.8863645E-03
87500.00	-51.00000	0.5660000	1.8393904E-03
88000.00	-50.30000	0.5530000	1.7931815E-03
88500.00	-49.60000	0.5400000	1.7489813E-03
89000.00	-48.90000	0.5280000	1.7055464E-03

89500.00	-48.20000	0.5160000	1.6633983E-03
90000.00	-47.50000	0.5040000	1.6225374E-03
90500.00	-46.80000	0.4920000	1.5826415E-03
91000.00	-46.10000	0.4810000	1.5437109E-03
91500.00	-45.40000	0.4700000	1.5057455E-03
92000.00	-44.70000	0.4590000	1.4687453E-03
92500.00	-44.00000	0.4490000	1.4330321E-03
93000.00	-43.30000	0.4390000	1.3979624E-03
93500.00	-42.60000	0.4290000	1.3638580E-03
94000.00	-41.90000	0.4190000	1.3310404E-03
94500.00	-41.20000	0.4100000	1.2988662E-03
95000.00	-40.50000	0.4000000	1.2673358E-03
95500.00	-39.80000	0.3910000	1.2367704E-03
96000.00	-39.10000	0.3830000	1.2068485E-03
96500.00	-38.40000	0.3740000	1.1778920E-03
97000.00	-37.70000	0.3660000	1.1495787E-03
97500.00	-37.00000	0.3570000	1.1219091E-03
98000.00	-36.30000	0.3490000	1.0952046E-03
98500.00	-35.60000	0.3420000	1.0691436E-03
99000.00	-34.90000	0.3340000	1.0437262E-03
99500.00	-34.20000	0.3270000	1.0189521E-03
100000.0	-33.50000	0.3200000	9.9482166E-04

**APPENDIX G.**  
**MIL-C-005011B DATA FILES**

MIL-C-005011B (USAF)  
TROPICAL ATMOSPHERE

ALTITUDE ft	TEMPERATURE F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.000000E+00	89.80000	29.92000	7.2166391E-02
500.0000	88.00000	29.41000	7.1201175E-02
1000.000	86.10000	28.91000	7.0235945E-02
1500.000	84.30000	28.42000	6.9270723E-02
2000.000	82.50000	27.93000	6.8305507E-02
2500.000	80.60000	27.45000	6.7372464E-02
3000.000	78.80000	26.99000	6.6407241E-02
3500.000	77.00000	26.51000	6.5506369E-02
4000.000	75.10000	26.06000	6.4573318E-02
4500.000	73.30000	25.60000	6.3672446E-02
5000.000	71.50000	25.15000	6.2771566E-02
5500.000	69.60000	24.71000	6.1902869E-02
6000.000	67.80000	24.28000	6.1034173E-02
6500.000	65.90000	23.85000	6.0165472E-02
7000.000	64.10000	23.43000	5.9296776E-02
7500.000	62.30000	23.01000	5.8460250E-02
8000.000	60.40000	22.60000	5.7591546E-02
8500.000	58.60000	22.20000	5.6787197E-02
9000.000	56.80000	21.80000	5.5950671E-02
9500.000	54.90000	21.41000	5.5146318E-02
10000.00	53.10000	21.02000	5.4341968E-02
10500.00	51.30000	20.64000	5.3537618E-02
11000.00	49.40000	20.26000	5.2733269E-02
11500.00	47.60000	19.89000	5.1961094E-02
12000.00	45.80000	19.52000	5.1188912E-02
12500.00	43.90000	19.16000	5.0448909E-02
13000.00	42.10000	18.81000	4.9676731E-02
13500.00	40.30000	18.46000	4.8936728E-02
14000.00	38.40000	18.12000	4.8196726E-02
14500.00	36.60000	17.78000	4.7488894E-02
15000.00	34.80000	17.44000	4.6781067E-02
15500.00	32.90000	17.12000	4.6073236E-02
16000.00	31.10000	16.79000	4.5365408E-02
16500.00	29.30000	16.48000	4.4657577E-02
17000.00	27.40000	16.16000	4.3981928E-02
17500.00	25.60000	15.85000	4.3306269E-02
18000.00	23.80000	15.55000	4.2630617E-02
18500.00	21.90000	15.25000	4.1987136E-02
19000.00	20.10000	14.96000	4.1311480E-02
19500.00	18.30000	14.67000	4.0667996E-02
20000.00	16.40000	14.38000	4.0024515E-02
20500.00	14.60000	14.10000	3.9413210E-02
21000.00	12.80000	13.82000	3.8801905E-02
21500.00	10.90000	13.55000	3.8158424E-02
22000.00	9.100000	13.28000	3.7547115E-02
22500.00	7.300000	13.01000	3.6935810E-02
23000.00	5.400000	12.76000	3.6356676E-02
23500.00	3.600000	12.50000	3.5777543E-02
24000.00	1.800000	12.25000	3.5198409E-02
24500.00	-0.100000	12.00000	3.4619279E-02
25000.00	-1.900000	11.76000	3.4040146E-02
25500.00	-3.700000	11.52000	3.3493184E-02
26000.00	-5.600000	11.29000	3.2946225E-02
26500.00	-7.400000	11.06000	3.2399267E-02
27000.00	-9.200000	10.83000	3.1852309E-02
27500.00	-11.10000	10.60000	3.1337526E-02
28000.00	-12.90000	10.39000	3.0822739E-02

28500.00	-14.70000	10.17000	3.0307956E-02
29000.00	-16.60000	9.960000	2.9793169E-02
29500.00	-18.40000	9.750000	2.9278383E-02
30000.00	-20.20000	9.540000	2.8795773E-02
30500.00	-22.10000	9.340000	2.8280988E-02
31000.00	-23.90000	9.140000	2.7798379E-02
31500.00	-25.70000	8.950000	2.7347941E-02
32000.00	-27.60000	8.750000	2.6865330E-02
32500.00	-29.40000	8.560000	2.6382720E-02
33000.00	-31.20000	8.380000	2.5932284E-02
33500.00	-33.10000	8.200000	2.5481846E-02
34000.00	-34.90000	8.020000	2.5031410E-02
34500.00	-36.80000	7.840000	2.4580972E-02
35000.00	-38.60000	7.760000	2.4162710E-02
35500.00	-40.40000	7.500000	2.3712276E-02
36000.00	-42.30000	7.340000	2.3294013E-02
36500.00	-44.10000	7.170000	2.2875749E-02
37000.00	-45.90000	7.010000	2.2457486E-02
37500.00	-47.80000	6.860000	2.2071397E-02
38000.00	-49.60000	6.700000	2.1653134E-02
38500.00	-51.40000	6.550000	2.1267047E-02
39000.00	-53.30000	6.400000	2.0880960E-02
39500.00	-55.10000	6.250000	2.0494869E-02
40000.00	-56.90000	6.110000	2.0108782E-02
40500.00	-58.80000	5.970000	1.9722693E-02
41000.00	-60.60000	5.830000	1.9368777E-02
41500.00	-62.50000	5.700000	1.9014863E-02
42000.00	-64.30000	5.560000	1.8687345E-02
42500.00	-66.10000	5.430000	1.8274860E-02
43000.00	-68.00000	5.300000	1.7953120E-02
43500.00	-69.80000	5.180000	1.7599205E-02
44000.00	-71.60000	5.050000	1.7245291E-02
44500.00	-73.50000	4.930000	1.6923551E-02
45000.00	-75.30000	4.810000	1.6601810E-02
45500.00	-77.20000	4.700000	1.6280070E-02
46000.00	-79.00000	4.580000	1.5958330E-02
46500.00	-80.80000	4.470000	1.5636588E-02
47000.00	-82.70000	4.360000	1.5347022E-02
47500.00	-84.50000	4.250000	1.5025280E-02
48000.00	-86.30000	4.150000	1.4735715E-02
48500.00	-88.20000	4.050000	1.4446148E-02
49000.00	-90.00000	3.950000	1.4156581E-02
49500.00	-91.90000	3.850000	1.3867015E-02
50000.00	-93.70000	3.750000	1.3577448E-02
50500.00	-95.50000	3.650000	1.3287881E-02
51000.00	-97.40000	3.560000	1.3030490E-02
51500.00	-99.20000	3.470000	1.2773097E-02
52000.00	-101.0000	3.380000	1.2483532E-02
52500.00	-102.9000	3.290000	1.2226138E-02
53000.00	-104.7000	3.210000	1.1968746E-02
53500.00	-106.5000	3.120000	1.1711354E-02
54000.00	-108.3000	3.040000	1.1486135E-02
54500.00	-110.2000	2.960000	1.1228743E-02
55000.00	-112.0000	2.880000	1.0971351E-02
55500.00	-110.8000	2.810000	1.0649610E-02
56000.00	-109.6000	2.730000	1.0327870E-02
56500.00	-108.4000	2.660000	1.0038303E-02
57000.00	-107.2000	2.590000	9.7487373E-03
57500.00	-106.0000	2.520000	9.4591705E-03
58000.00	-104.8000	2.460000	9.1696046E-03
58500.00	-103.6000	2.390000	8.9122113E-03
59000.00	-102.4000	2.330000	8.6548198E-03

59500.00	-101.2000	2.270000	8.3974274E-03
60000.00	-100.0000	2.210000	8.1400350E-03
60500.00	-98.80000	2.150000	7.9148160E-03
61000.00	-97.60000	2.100000	7.6895980E-03
61500.00	-96.40000	2.040000	7.4643791E-03
62000.00	-95.20000	1.990000	7.2391611E-03
62500.00	-94.00000	1.940000	7.0461165E-03
63000.00	-92.80000	1.890000	6.8530720E-03
63500.00	-91.60000	1.850000	6.6600279E-03
64000.00	-90.40000	1.800000	6.4669834E-03
64500.00	-89.20000	1.750000	6.2739397E-03
65000.00	-88.00000	1.710000	6.1130691E-03
65500.00	-86.80000	1.670000	5.9200251E-03
66000.00	-85.60000	1.630000	5.7591544E-03
66500.00	-84.40000	1.590000	5.5982848E-03
67000.00	-83.20000	1.550000	5.4374142E-03
67500.00	-82.00000	1.510000	5.3087180E-03
68000.00	-80.80000	1.470000	5.1478483E-03
68500.00	-79.60000	1.440000	5.0191516E-03
69000.00	-78.40000	1.400000	4.8582815E-03
69500.00	-77.20000	1.370000	4.7295853E-03
70000.00	-76.00000	1.330000	4.6008890E-03
70500.00	-75.40000	1.300000	4.5043672E-03
71000.00	-74.70000	1.270000	4.3756710E-03
71500.00	-74.00000	1.240000	4.2791488E-03
72000.00	-73.40000	1.210000	4.1504526E-03
72500.00	-72.70000	1.180000	4.0539303E-03
73000.00	-72.00000	1.150000	3.9574080E-03
73500.00	-71.40000	1.130000	3.8287120E-03
74000.00	-70.70000	1.100000	3.7321895E-03
74500.00	-70.00000	1.070000	3.6356675E-03
75000.00	-69.40000	1.050000	3.5713194E-03
75500.00	-68.70000	1.020000	3.4747974E-03
76000.00	-68.10000	1.010000	3.4104490E-03
76500.00	-67.40000	0.9900000	3.3139270E-03
77000.00	-66.70000	0.9600000	3.2495789E-03
77500.00	-66.10000	0.9400000	3.1530568E-03
78000.00	-65.40000	0.9200000	3.0887087E-03
78500.00	-64.80000	0.9000000	2.9921865E-03
79000.00	-64.10000	0.8700000	2.9278386E-03
79500.00	-63.50000	0.8500000	2.8634903E-03
80000.00	-62.80000	0.8300000	2.7991424E-03
80500.00	-62.20000	0.8100000	2.7026201E-03
81000.00	-61.50000	0.8100000	2.6704459E-03
81500.00	-60.90000	0.7900000	2.6060981E-03
82000.00	-60.20000	0.7700000	2.5417497E-03
82500.00	-59.50000	0.7500000	2.4774019E-03
83000.00	-58.90000	0.7300000	2.4130538E-03
83500.00	-58.20000	0.7200000	2.3487057E-03
84000.00	-57.50000	0.7000000	2.3165315E-03
84500.00	-56.90000	0.6800000	2.2521836E-03
85000.00	-56.20000	0.6700000	2.1878355E-03
85500.00	-55.60000	0.6500000	2.1556614E-03
86000.00	-54.90000	0.6400000	2.0913132E-03
86500.00	-54.20000	0.6300000	2.0591391E-03
87000.00	-53.60000	0.6200000	1.9947912E-03
87500.00	-52.90000	0.6000000	1.9626170E-03
88000.00	-52.20000	0.5900000	1.8982691E-03
88500.00	-51.60000	0.5700000	1.8660948E-03
89000.00	-50.90000	0.5600000	1.8339208E-03
89500.00	-50.30000	0.5500000	1.7695726E-03
90000.00	-49.60000	0.5400000	1.7373987E-03

90500.00	-48.90000	0.5200000	1.7052245E-03
91000.00	-48.30000	0.5100000	1.6408765E-03
91500.00	-47.60000	0.5000000	1.2869621E-03
92000.00	-46.90000	0.4900000	1.5765284E-03
92500.00	-46.30000	0.4800000	1.5443544E-03
93000.00	-45.60000	0.4700000	1.5121803E-03
93500.00	-45.00000	0.4600000	1.4800063E-03
94000.00	-44.30000	0.4500000	1.4478321E-03
94500.00	-43.70000	0.4400000	1.4156582E-03
95000.00	-43.00000	0.4300000	1.3834841E-03
95500.00	-42.30000	0.4200000	1.3513101E-03
96000.00	-41.70000	0.4100000	1.3191360E-03
96500.00	-41.00000	0.4000000	1.2869621E-03
97000.00	-40.40000	0.4000000	1.2547879E-03
97500.00	-39.70000	0.3900000	1.2226138E-03
98000.00	-39.10000	0.3800000	1.1904398E-03
98500.00	-38.40000	0.3700000	1.1582657E-03
99000.00	-37.70000	0.3600000	1.1582657E-03
99500.00	-37.10000	0.3600000	1.1260918E-03
100000.0	-36.40000	0.3500000	1.0939178E-03

**APPENDIX H.**  
**MIL-STD-210C DATA FILES**

MIL-STD 210C  
HIGHEST RECORDED TEMPERATURE

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	136.00	0.2952267E+02	0.6569999E-01
3279.	106.00	0.2713969E+02	0.6360000E-01
6558.	90.00	0.2371825E+02	0.5720000E-01
13092.	66.00	0.1887577E+02	0.4760000E-01
19681.	46.00	0.1453372E+02	0.3810000E-01
26167.	25.00	0.1140736E+02	0.3120000E-01
32748.	9.00	0.8661992E+01	0.2450000E-01
39326.	-8.00	0.6712310E+01	0.1970000E-01
45799.	-22.00	0.4292148E+01	0.1300000E-01
52368.	-31.00	0.3136746E+01	0.9700000E-02
58933.	-31.00	0.2392981E+01	0.7400000E-02
65394.	-24.00	0.1774745E+01	0.5400000E-02
71951.	-20.00	0.1326696E+01	0.4000000E-02
78404.	-27.00	0.9791800E+00	0.3000000E-02
84952.	-17.00	0.7346616E+00	0.2200000E-02
91497.	-8.00	0.5792348E+00	0.1700000E-02
97938.	1.00	0.4170189E+00	0.1200000E-02

MIL-STD 210C  
HIGHEST RECORDED TEMPERATURE  
FREQUENCY OF OCCURENCE  
1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	120.00	0.2951679E+02	0.6750000E-01
3279.	104.00	0.2674607E+02	0.6290000E-01
6558.	86.00	0.2362798E+02	0.5740000E-01
13092.	63.00	0.1864976E+02	0.4730000E-01
19681.	43.00	0.1452333E+02	0.3830000E-01
26167.	23.00	0.1128747E+02	0.3100000E-01
32748.	9.00	0.8768058E+01	0.2480000E-01
39326.	-8.00	0.6746382E+01	0.1980000E-01
45799.	-22.00	0.4325164E+01	0.1310000E-01
52368.	-35.00	0.3171548E+01	0.9900000E-02
58933.	-35.00	0.2370652E+01	0.7400000E-02
65394.	-26.00	0.1766598E+01	0.5400000E-02
71951.	-22.00	0.1386694E+01	0.4200000E-02
78404.	-27.00	0.1011819E+01	0.3100000E-02
84952.	-18.00	0.7330019E+00	0.2200000E-02
91497.	-9.00	0.5779524E+00	0.1700000E-02
97938.	0.00	0.4161137E+00	0.1200000E-02
114369.	37.00	0.1438745E+00	0.3840000E-03
130182.	77.00	0.7894533E-01	0.1950000E-03
146957.	86.00	0.3597709E-01	0.8740000E-04
162720.	99.00	0.2621382E-01	0.6220000E-04
178459.	66.00	0.2454643E-01	0.6190000E-04
195156.	84.00	0.4511413E-02	0.1100000E-04
210845.	99.00	0.2655097E-02	0.6300000E-05
227490.	75.00	0.1371353E-02	0.3400000E-05
243131.	61.00	0.3535001E-03	0.9000000E-06
258748.	41.00	0.1510762E-03	0.4000000E-06

MIL-STD 210C  
LOWEST RECORDED TEMPERATURE

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-90.00	0.3098223E+02	0.1111000E+00
3279.	-65.00	0.2637863E+02	0.8860000E-01
6558.	-53.00	0.2196543E+02	0.7160000E-01
13092.	-63.00	0.1678714E+02	0.5610000E-01
19681.	-78.00	0.1223662E+02	0.4250000E-01
26167.	-90.00	0.8868004E+01	0.3180000E-01
32748.	-103.00	0.6861061E+01	0.2550000E-01
39326.	-112.00	0.5140529E+01	0.1960000E-01
45799.	-107.00	0.3618195E+01	0.1360000E-01
52368.	-125.00	0.3282046E+01	0.1300000E-01
58933.	-126.00	0.2240225E+01	0.8900000E-02
65394.	-125.00	0.1237079E+01	0.4900000E-02
71951.	-121.00	0.8686407E+00	0.3400000E-02
78404.	-123.00	0.6095372E+00	0.2400000E-02
84952.	-119.00	0.4625843E+00	0.1800000E-02
91497.	-119.00	0.3083896E+00	0.1200000E-02
97938.	-121.00	0.1762830E+00	0.6900000E-03

MIL-STD 210C  
 LOWEST RECORDED TEMPERATURE  
 FREQUENCY OF OCCURRENCE  
 1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-78.00	0.2893601E+02	0.1005000E+00
3279.	-63.00	0.2630285E+02	0.8790000E-01
6558.	-42.00	0.2224449E+02	0.7060000E-01
13092.	-54.00	0.1658657E+02	0.5420000E-01
19681.	-71.00	0.1234377E+02	0.4210000E-01
26167.	-87.00	0.9164875E+01	0.3260000E-01
32748.	-101.00	0.7007762E+01	0.2590000E-01
39326.	-99.00	0.5033456E+01	0.1850000E-01
45799.	-103.00	0.3605420E+01	0.1340000E-01
52368.	-123.00	0.3276262E+01	0.1290000E-01
58933.	-123.00	0.2260367E+01	0.8900000E-02
65394.	-123.00	0.1244472E+01	0.4900000E-02
71951.	-119.00	0.8737704E+00	0.3400000E-02
78404.	-121.00	0.6131581E+00	0.2400000E-02
84952.	-119.00	0.4625843E+00	0.1800000E-02
91497.	-117.00	0.3102000E+00	0.1200000E-02
97938.	-117.00	0.2585000E+00	0.1000000E-02
114369.	-114.00	0.1176042E+00	0.4510000E-03
130182.	-96.00	0.4883295E-01	0.1780000E-03
146957.	-94.00	0.2868846E-01	0.1040000E-03
162720.	-94.00	0.1244086E-01	0.4510000E-04
178459.	-101.00	0.1149922E-01	0.4250000E-04
195156.	-101.00	0.4762031E-02	0.1760000E-04
210845.	-125.00	0.1994474E-02	0.7900000E-05
227490.	-161.00	0.6533924E-03	0.2900000E-05
243131.	-184.00	0.2495486E-03	0.1200000E-05
253748.	-229.00	0.6960423E-04	0.4000000E-06

MIL-STD 210C  
HIGHEST RECORDED DENSITY

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-90.00	0.3095435E+02	0.1110000E+00
3279.	-45.00	0.2637028E+02	0.8430000E-01
6558.	-49.00	0.2261520E+02	0.7300000E-01
13092.	-63.00	0.1678714E+02	0.5610000E-01
19681.	-56.00	0.1333783E+02	0.4380000E-01
26167.	-45.00	0.1079211E+02	0.3450000E-01
32748.	-56.00	0.8282853E+01	0.2720000E-01
39326.	-78.00	0.6190289E+01	0.2150000E-01
45799.	-92.00	0.4631900E+01	0.1670000E-01
52368.	-105.00	0.3424672E+01	0.1280000E-01
58833.	-112.00	0.2454865E+01	0.9360000E-02
65394.	-94.00	0.1859233E+01	0.6740000E-02
71951.	-87.00	0.1281958E+01	0.4560000E-02
78404.	-74.00	0.1035739E+01	0.3560000E-02
84952.	-40.00	0.8484520E+00	0.2680000E-02
91497.	-36.00	0.5593070E+00	0.1750000E-02
97938.	-31.00	0.4236223E+00	0.1310000E-02

MIL-STD 210C  
HIGHEST RECORDED DENSITY  
FREQUENCY OF OCCURRENCE  
1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-78.00	0.3080749E+02	0.1070000E+00
3279.	-35.00	0.2639753E+02	0.8240001E-01
6558.	-38.00	0.2303010E+02	0.7240000E-01
13092.	-53.00	0.1708763E+02	0.5570000E-01
19681.	-47.00	0.1351068E+02	0.4340000E-01
26167.	-53.00	0.1052254E+02	0.3430000E-01
32748.	-56.00	0.8252400E+01	0.2710000E-01
39326.	-87.00	0.5988093E+01	0.2130000E-01
45799.	-92.00	0.4631900E+01	0.1670000E-01
52368.	-101.00	0.3463295E+01	0.1280000E-01
58933.	-117.00	0.2404050E+01	0.9300000E-02
65394.	-105.00	0.1752469E+01	0.6550000E-02
71951.	-96.00	0.1250998E+01	0.4560000E-02
78404.	-74.00	0.1035739E+01	0.3560000E-02
84952.	-40.00	0.8484520E+00	0.2680000E-02
91497.	-36.00	0.5593070E+00	0.1750000E-02
97938.	-31.00	0.4236223E+00	0.1310000E-02
114369.	1.00	0.2363107E+00	0.6800000E-03
130182.	23.00	0.1197928E+00	0.3290000E-03
146957.	44.00	0.6611193E-01	0.1740000E-03
162720.	53.00	0.3573505E-01	0.9240000E-04
178459.	41.00	0.2035752E-01	0.5390000E-04
195156.	3.00	0.1057544E-01	0.3030000E-04
210845.	-55.00	0.5250661E-02	0.1720000E-04
227490.	-109.00	0.2476047E-02	0.9360000E-05
243131.	-138.00	0.1089535E-02	0.4490000E-05
258748.	-152.00	0.4757990E-03	0.2050000E-05

MIL-STD 210C  
LOWEST RECORDED DENSITY

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	85.00	0.2592671E+02	0.6310000E-01
3279.	77.00	0.2627463E+02	0.6490000E-01
6558.	86.00	0.2342216E+02	0.5690000E-01
13092.	54.00	0.1840612E+02	0.4750000E-01
19681.	1.00	0.1341411E+02	0.3860000E-01
26167.	-60.00	0.8653025E+01	0.2870000E-01
32748.	-67.00	0.6279833E+01	0.2120000E-01
39326.	-54.00	0.4865803E+01	0.1590000E-01
45799.	-54.00	0.3611099E+01	0.1180000E-01
52368.	-45.00	0.2637028E+01	0.8430000E-02
58933.	-42.00	0.1887316E+01	0.5990000E-02
65394.	-17.00	0.1375821E+01	0.4120001E-02
71951.	-26.00	0.1001072E+01	0.3060000E-02
78404.	-38.00	0.6966286E+00	0.2190000E-02
84952.	-49.00	0.4244221E+00	0.1370000E-02
91497.	-47.00	0.2720814E+00	0.8740000E-03
97938.	-44.00	0.1956671E+00	0.6240000E-03

MIL-STD 210C  
 LOWEST RECORDED DENSITY  
 FREQUENCY OF OCCURRENCE  
 1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	118.00	0.2963284E+02	0.6800000E-01
3279.	75.00	0.2617671E+02	0.6490000E-01
6558.	86.00	0.2350448E+02	0.5710000E-01
13092.	52.00	0.1837306E+02	0.4760000E-01
19681.	28.00	0.1423710E+02	0.3870000E-01
26167.	-49.00	0.8891179E+01	0.2870000E-01
32748.	-47.00	0.6630816E+01	0.2130000E-01
39326.	-56.00	0.4841814E+01	0.1590000E-01
45799.	-54.00	0.3641702E+01	0.1190000E-01
52368.	-45.00	0.2655797E+01	0.8490000E-02
58933.	-45.00	0.1895657E+01	0.6060000E-02
65394.	-17.00	0.1395857E+01	0.4180000E-02
71951.	-35.00	0.9802966E+00	0.3060000E-02
78404.	-38.00	0.7157143E+00	0.2250000E-02
84952.	-49.00	0.4461080E+00	0.1440000E-02
91497.	-47.00	0.2720814E+00	0.8740000E-03
97938.	-44.00	0.2154220E+00	0.6870000E-03
114369.	-73.00	0.8634093E-01	0.2960000E-03
130182.	-46.00	0.3900754E-01	0.1250000E-03
146957.	-4.00	0.2065901E-01	0.6010000E-04
162720.	1.00	0.1000845E-01	0.2880000E-04
178459.	-4.00	0.4949911E-02	0.1440000E-04
195156.	-12.00	0.2130943E-02	0.6310000E-05
210845.	-53.00	0.9908986E-03	0.3230000E-05
227490.	-82.00	0.4529957E-03	0.1590000E-05
243131.	-91.00	0.1960701E-03	0.7050000E-06
258748.	-80.00	0.7160293E-04	0.2500000E-06

MIL-STD 210C  
HIGHEST TEMPERATURE AT 5KM  
1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	62.60	0.2988301E+02	0.7584810E-01
6560.	69.82	0.2370344E+02	0.5934256E-01
13115.	51.86	0.1872459E+02	0.4852406E-01
19666.	31.27	0.1466483E+02	0.3959708E-01
26214.	2.56	0.1133883E+02	0.3251792E-01
32757.	-26.13	0.8624034E+01	0.2636892E-01
39296.	-54.80	0.6438785E+01	0.2108140E-01
45831.	-80.67	0.4706601E+01	0.1646185E-01
52362.	-97.13	0.3383859E+01	0.1237292E-01
58888.	-90.90	0.2417405E+01	0.8689757E-02
65411.	-76.60	0.1747877E+01	0.6048496E-02
71929.	-59.15	0.1275006E+01	0.4328024E-02
78444.	-62.01	0.9355843E+00	0.3118824E-02
84954.	-54.88	0.6904535E+00	0.2261085E-02
91460.	-47.75	0.5123174E+00	0.1648682E-02
97963.	-40.62	0.3822516E+00	0.1209200E-02
104461.	-33.50	0.2865942E+00	0.8914492E-03
110955.	-26.38	0.2158836E+00	0.6604715E-03
117445.	-19.26	0.1635339E+00	0.4922323E-03
123931.	-12.15	0.1243829E+00	0.3684407E-03
130413.	-5.05	0.9503580E-01	0.2771109E-03
136890.	2.05	0.7292831E-01	0.2093782E-03
143364.	9.15	0.5621018E-01	0.1589377E-03
149834.	16.24	0.4347892E-01	0.1211073E-03
156299.	19.40	0.3375076E-01	0.9338993E-04
162761.	19.40	0.2621550E-01	0.7253950E-04
169219.	13.36	0.2035614E-01	0.5704526E-04
175672.	5.58	0.1573351E-01	0.4482842E-04
182122.	-3.17	0.1210960E-01	0.3516481E-04
188567.	-15.19	0.9262391E-02	0.2762369E-04
195009.	-27.19	0.7034670E-02	0.2156209E-04
201446.	-39.18	0.5302935E-02	0.1671780E-04
207880.	-51.17	0.3964791E-02	0.1286609E-04
214309.	-63.15	0.2939132E-02	0.9825919E-05
220735.	-75.13	0.2160431E-02	0.7447472E-05
227156.	-87.09	0.1572972E-02	0.5596528E-05
233573.	-94.82	0.1134514E-02	0.4122016E-05
239987.	-99.39	0.8145652E-03	0.2997092E-05
246396.	-103.96	0.5826179E-03	0.2171191E-05
252802.	-108.52	0.4149041E-03	0.1566279E-05
259203.	-113.08	0.2942827E-03	0.1125548E-05

MIL-STD 210C  
HIGHEST TEMPERATURE AT 5KM  
10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	65.30	0.2988916E+02	0.7547354E-01
6560.	64.37	0.2361969E+02	0.5974833E-01
13115.	50.07	0.1863035E+02	0.4844014E-01
19666.	23.23	0.1455189E+02	0.3994667E-01
26214.	-3.66	0.1120972E+02	0.3258659E-01
32757.	-30.54	0.8499898E+01	0.2625655E-01
39296.	-57.38	0.6333323E+01	0.2086915E-01
45831.	-84.24	0.4623378E+01	0.1632451E-01
52362.	-111.06	0.3298198E+01	0.1254147E-01
58888.	-105.41	0.2323969E+01	0.8696000E-02
65411.	-91.12	0.1659067E+01	0.5967342E-02
71929.	-76.84	0.1199072E+01	0.4151981E-02
78444.	-67.98	0.8758082E+00	0.2964006E-02
84954.	-61.56	0.6434352E+00	0.2142475E-02
91460.	-55.15	0.4751083E+00	0.1556915E-02
97963.	-48.74	0.3523982E+00	0.1136785E-02
104461.	-42.33	0.2627685E+00	0.8346412E-03
110955.	-35.93	0.1968762E+00	0.6158990E-03
117445.	-29.53	0.1481747E+00	0.4566493E-03
123931.	-23.14	0.1119760E+00	0.3400367E-03
130413.	-16.75	0.8497635E-01	0.2543252E-03
136890.	-10.37	0.6476733E-01	0.1910873E-03
143364.	-3.98	0.4954990E-01	0.1441426E-03
149834.	2.39	0.3805772E-01	0.1091838E-03
156290.	8.60	0.2935130E-01	0.8308957E-04
162761.	8.60	0.2266952E-01	0.6417436E-04
169219.	8.60	0.1752037E-01	0.4959779E-04
175672.	8.60	0.1353776E-01	0.3832358E-04
182122.	-1.53	0.1044014E-01	0.3020814E-04
188567.	-15.65	0.7991868E-02	0.2385938E-04
195009.	-29.76	0.6065608E-02	0.1870296E-04
201446.	-43.86	0.4562519E-02	0.1454536E-04
207880.	-57.95	0.3397670E-02	0.1121179E-04
214309.	-72.03	0.2504555E-02	0.8564905E-05
220735.	-80.92	0.1828245E-02	0.6398708E-05
227156.	-86.19	0.1329138E-02	0.4717565E-05
233573.	-91.46	0.9614965E-03	0.3461545E-05
239987.	-96.73	0.6925620E-03	0.2529519E-05
246396.	-101.99	0.4963901E-03	0.1839707E-05
252802.	-107.26	0.3541616E-03	0.1332180E-05
259203.	-112.51	0.2514392E-03	0.9601183E-05

MIL-STD 210C  
HIGHEST TEMPERATURE AT 10KM  
1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	78.80	0.2974489E+02	0.7322619E-01
6560.	60.85	0.2361053E+02	0.6012913E-01
13115.	42.91	0.1857916E+02	0.4900474E-01
19666.	24.98	0.1449511E+02	0.3964702E-01
26214.	7.06	0.1120520E+02	0.3182499E-01
32757.	-16.90	0.8569903E+01	0.2565726E-01
39296.	-47.32	0.6437299E+01	0.2069436E-01
45831.	-77.72	0.4730556E+01	0.1641815E-01
52362.	-108.10	0.3390695E+01	0.1278493E-01
58888.	-124.60	0.2366899E+01	0.9363964E-02
65411.	-94.66	0.1669060E+01	0.6061605E-02
71929.	-79.07	0.1206061E+01	0.4200674E-02
78444.	-70.52	0.8787467E+00	0.2993347E-02
84954.	-61.96	0.6448409E+00	0.2149342E-02
91460.	-53.42	0.4763747E+00	0.1554418E-02
97963.	-44.88	0.3543418E+00	0.1132415E-02
104461.	-36.34	0.2651448E+00	0.8302714E-03
110955.	-27.81	0.1996320E+00	0.6127778E-03
117445.	-19.28	0.1511247E+00	0.4549013E-03
123931.	-10.76	0.1150447E+00	0.3397246E-03
130413.	-2.25	0.8803845E-01	0.2551368E-03
136890.	6.26	0.6773429E-01	0.1927104E-03
143364.	14.76	0.5234802E-01	0.1462651E-03
149834.	23.00	0.4066433E-01	0.1116809E-03
156299.	23.00	0.3164044E-01	0.8689758E-04
162761.	23.00	0.2463954E-01	0.6767024E-04
169219.	23.00	0.1919111E-01	0.5270663E-04
175672.	17.22	0.1493464E-01	0.4151357E-04
182122.	4.87	0.1155946E-01	0.3298612E-04
188567.	-7.48	0.8886338E-02	0.2605055E-04
195009.	-19.82	0.6783759E-02	0.2044465E-04
201446.	-32.15	0.5137950E-02	0.1593122E-04
207880.	-44.47	0.3861645E-02	0.1232922E-04
214309.	-56.79	0.2878153E-02	0.9470089E-05
220735.	-69.10	0.2126234E-02	0.7216494E-05
227156.	-81.40	0.1556207E-02	0.5453572E-05
233573.	-93.69	0.1127327E-02	0.4083312E-05
239987.	-103.00	0.8080809E-03	0.3003335E-05
246396.	-103.00	0.5774646E-03	0.2146220E-05
252802.	-103.00	0.4126907E-03	0.1533817E-05
259203.	-103.00	0.2949470E-03	0.1096208E-05

MIL-STD 210C  
HIGHEST TEMPERATURE AT 10KM  
10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	81.50	0.2984307E+02	0.7310134E-01
6560.	61.76	0.2369842E+02	0.6024774E-01
13115.	42.03	0.1865058E+02	0.4927942E-01
19666.	22.31	0.1453790E+02	0.3998412E-01
26214.	2.61	0.1121797E+02	0.3216833E-01
32757.	-22.25	0.8552597E+01	0.2591945E-01
39296.	-52.68	0.6401590E+01	0.2085042E-01
45831.	-83.07	0.4685582E+01	0.1649306E-01
52362.	-108.66	0.3345711E+01	0.1263511E-01
58888.	-118.37	0.2341701E+01	0.9095529E-02
65411.	-87.68	0.1663523E+01	0.5928013E-02
71929.	-78.51	0.1204262E+01	0.4188188E-02
78444.	-70.66	0.8776766E+00	0.2990850E-02
84954.	-62.83	0.6438137E+00	0.2150590E-02
91460.	-55.00	0.4752859E+00	0.1556915E-02
97963.	-47.17	0.3529672E+00	0.1134288E-02
104461.	-39.34	0.2636590E+00	0.8315199E-03
110955.	-31.53	0.1980952E+00	0.6133395E-03
117445.	-23.71	0.1495840E+00	0.4548389E-03
123931.	-15.91	0.1135387E+00	0.3391628E-03
130413.	-8.10	0.8661410E-01	0.2542628E-03
136890.	-0.30	0.6639083E-01	0.1915867E-03
143364.	7.49	0.5112726E-01	0.1450790E-03
149834.	15.28	0.3954391E-01	0.1103699E-03
156299.	23.00	0.3073123E-01	0.8440052E-04
162761.	23.00	0.2391217E-01	0.6567260E-04
169219.	23.00	0.1863194E-01	0.5117094E-04
175672.	23.00	0.1451096E-01	0.3985303E-04
182122.	12.93	0.1127485E-01	0.3162523E-04
188567.	2.35	0.8711772E-02	0.2499554E-04
195009.	-8.22	0.6692571E-02	0.1965184E-04
201446.	-18.79	0.5109550E-02	0.1536314E-04
207880.	-29.35	0.3876648E-02	0.1194217E-04
214309.	-39.91	0.2921664E-02	0.9226625E-05
220735.	-49.46	0.2186769E-02	0.7066671E-05
227156.	-58.25	0.1627642E-02	0.5374915E-05
233573.	-67.03	0.1203188E-02	0.4062088E-05
239987.	-75.80	0.8834485E-03	0.3050779E-05
246396.	-84.57	0.6442238E-03	0.2276691E-05
252802.	-93.33	0.4663210E-03	0.1687386E-05
259203.	-102.09	0.3351079E-03	0.1242286E-05

MIL-STD 210C  
HIGHEST TEMPERATURE AT 20KM  
1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-49.00	0.3001496E+02	0.9688581E-01
6560.	-30.10	0.2245483E+02	0.6929333E-01
13115.	-43.67	0.1679902E+02	0.5353066E-01
19666.	-61.68	0.1241294E+02	0.4134502E-01
26214.	-70.60	0.9064056E+01	0.3088235E-01
32757.	-67.88	0.6612567E+01	0.2237363E-01
39296.	-64.29	0.4839235E+01	0.1622463E-01
45831.	-60.69	0.3552979E+01	0.1180484E-01
52362.	-57.10	0.2614319E+01	0.8608603E-02
58888.	-56.66	0.1939952E+01	0.6152124E-02
65411.	-26.24	0.1454523E+01	0.4448507E-02
71929.	-21.92	0.1099995E+01	0.3331074E-02
78444.	-29.09	0.8297369E+00	0.2554489E-02
84954.	-36.25	0.6229208E+00	0.1950201E-02
91460.	-43.41	0.4655648E+00	0.1482627E-02
97963.	-45.40	0.3466761E+00	0.1109317E-02
104461.	-45.40	0.2581049E+00	0.8259015E-03
110955.	-45.40	0.1923594E+00	0.6155245E-03
117445.	-45.40	0.1433136E+00	0.4585845E-03
123931.	-45.40	0.1067731E+00	0.3416598E-03
130413.	-45.40	0.7957746E-02	0.2546374E-04
136890.	-45.40	0.5930755E-01	0.1897763E-03
143364.	-45.40	0.4422705E-01	0.1415207E-03
149834.	-45.40	0.3297032E-01	0.1055006E-03
156299.	-40.65	0.2462670E-01	0.7790817E-04
162761.	-35.31	0.1846923E-01	0.5769450E-04
169219.	-29.99	0.1390139E+00	0.4288695E-03
175672.	-24.66	0.1050095E-01	0.3199979E-04
182122.	-25.88	0.7946599E-02	0.2428388E-04
188567.	-28.36	0.6006076E-02	0.1845949E-04
195009.	-30.84	0.4531662E-02	0.1400849E-04
201446.	-33.32	0.3415242E-02	0.1061873E-04
207880.	-35.80	0.2569008E-02	0.8034281E-05
214309.	-36.40	0.1932096E-02	0.6050993E-05
220735.	-36.40	0.1452510E-02	0.4549013E-05
227156.	-36.40	0.1092323E-02	0.3420968E-05
233573.	-39.37	0.8208206E-03	0.2588824E-05
239987.	-43.60	0.6152436E-03	0.1960190E-05
246396.	-47.83	0.4598446E-03	0.1480130E-05
252802.	-52.06	0.3428303E-03	0.1114936E-05
259203.	-56.29	0.2547417E-03	0.8371383E-06

MIL-STD 210C  
HIGHEST TEMPERATURE AT 20KM  
10 PERCENT

ALTITUDE	TEMP	PRESSURE	DENSITY
ft	F	in Hg	lb/ft3
0.	32.00	0.2993816E+02	0.8071736E-01
6560.	13.96	0.2319668E+02	0.6492347E-01
13115.	-4.08	0.1779897E+02	0.5178896E-01
19666.	-25.70	0.1349439E+02	0.4122017E-01
26214.	-47.31	0.1009022E+02	0.3243677E-01
32757.	-48.01	0.7457885E+01	0.2401544E-01
39296.	-38.20	0.5561446E+01	0.1749188E-01
45831.	-38.20	0.4156199E+01	0.1307209E-01
52362.	-38.20	0.3106233E+01	0.9769735E-02
58888.	-38.20	0.2322231E+01	0.7303891E-02
65411.	-38.20	0.1736314E+01	0.5461064E-02
71929.	-38.20	0.1298465E+01	0.4083937E-02
78444.	-38.20	0.9711692E+00	0.3054525E-02
84954.	-38.20	0.7264416E+00	0.2284807E-02
91460.	-32.94	0.5443935E+00	0.1691132E-02
97963.	-27.58	0.4096121E+00	0.1256644E-02
104461.	-22.22	0.3092189E+00	0.9370206E-03
110955.	-13.77	0.2345523E+00	0.6973031E-03
117445.	-5.21	0.1789841E+00	0.5220722E-03
123931.	4.61	0.1372407E+00	0.3918507E-03
130413.	16.02	0.1059134E+00	0.2951521E-03
136890.	27.42	0.8223382E-01	0.2237987E-03
143364.	38.81	0.6425073E-01	0.1708611E-03
149834.	50.20	0.5047153E-01	0.1312203E-03
156299.	57.20	0.3987018E-01	0.1022545E-03
162761.	57.20	0.3152129E-01	0.8084221E-04
169219.	57.20	0.2492495E-01	0.6392466E-04
175672.	52.10	0.1969985E-01	0.5102735E-04
182122.	43.59	0.1551618E-01	0.4087058E-04
188567.	35.08	0.1217135E-01	0.3261156E-04
195009.	26.57	0.9509731E-02	0.2592569E-04
201446.	18.08	0.7397434E-02	0.2052581E-04
207880.	9.58	0.5730102E-02	0.1618717E-04
214309.	-2.59	0.4419098E-02	0.1281614E-04
220735.	-25.92	0.3368343E-02	0.1029412E-04
227156.	-49.23	0.2530135E-02	0.8171619E-05
233573.	-72.53	0.1870557E-02	0.6404951E-05
239987.	-95.81	0.1356928E-02	0.4943548E-05
246396.	-119.08	0.9638019E-03	0.3751203E-05
252802.	-142.33	0.6683049E-03	0.2791709E-05
259203.	-165.57	0.4508104E-03	0.2031980E-05

MIL-STD 210C  
 LOWEST TEMPERATURE AT 5KM  
 1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-63.40	0.2998886E+02	0.1003193E+00
6560.	-38.21	0.2230854E+02	0.7016729E-01
13115.	-54.92	0.1657895E+02	0.5429850E-01
19666.	-70.62	0.1214353E+02	0.4137623E-01
26214.	-74.22	0.8838225E+01	0.3039543E-01
32757.	-78.73	0.6413349E+01	0.2231744E-01
39296.	-85.92	0.4630746E+01	0.1642439E-01
45831.	-93.11	0.3322964E+01	0.1201709E-01
52362.	-100.30	0.2369339E+01	0.8739700E-02
58888.	-100.3	0.1685260E+01	0.6216423E-02
65411.	-100.30	0.1198196E+01	0.4419791E-02
71929.	-100.30	0.8521072E+00	0.3143170E-02
78444.	-86.84	0.6099528E+00	0.2168694E-02
84954.	-73.23	0.4418572E+00	0.1515714E-02
91460.	-59.63	0.3238392E+00	0.1073110E-02
97963.	-46.04	0.2397830E+00	0.7684692E-03
104461.	-32.46	0.1793746E+00	0.5565939E-03
110955.	-18.89	0.1354007E+00	0.4072076E-03
117445.	-8.57	0.1030313E+00	0.3027682E-03
123931.	0.35	0.7883377E-01	0.2271697E-03
130413.	9.26	0.6066272E-01	0.1714854E-03
136890.	18.17	0.4689578E-01	0.1300967E-03
143364.	25.70	0.3643462E-01	0.9950771E-04
149834.	25.70	0.2836597E-01	0.7747119E-04
156299.	23.52	0.2208563E-01	0.6059108E-04
162761.	17.83	0.1715296E-01	0.4761887E-04
169219.	12.15	0.1328265E-01	0.3731852E-04
175672.	6.47	0.1025588E-01	0.2916562E-04
182122.	0.80	0.7895332E-02	0.2272946E-04
188567.	-4.88	0.6058987E-02	0.1766043E-04
195009.	-10.90	0.4634640E-02	0.1369011E-04
201446.	-24.71	0.3525217E-02	0.1074359E-04
207880.	-38.51	0.2657708E-02	0.8365140E-05
214309.	-45.40	0.1987974E-02	0.6361252E-05
220735.	-45.40	0.1485615E-02	0.4753772E-05
227156.	-45.40	0.1110261E-02	0.3552688E-05
233573.	-48.36	0.8292208E-03	0.2672475E-05
239987.	-52.59	0.6176709E-03	0.2011379E-05
246396.	-56.82	0.4587241E-03	0.1509471E-05
252802.	-61.05	0.3397750E-03	0.1129918E-05
259203.	-65.27	0.2507376E-03	0.8427567E-06

MIL-STD 210C  
 LOWEST TEMPERATURE AT 5KM  
 10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-46.30	0.2999816E+02	0.9619912E-01
6560.	-33.73	0.2240546E+02	0.6973031E-01
13115.	-48.15	0.1670509E+02	0.5381158E-01
19666.	-65.28	0.1231006E+02	0.4137623E-01
26214.	-83.20	0.8944261E+01	0.3149413E-01
32757.	-83.20	0.6453342E+01	0.2272322E-01
39296.	-83.22	0.4655336E+01	0.1639318E-01
45831.	-90.41	0.3349180E+01	0.1202333E-01
52362.	-95.80	0.2393842E+01	0.8720971E-02
58888.	-95.80	0.1709961E+01	0.6229532E-02
65411.	-95.80	0.1221083E+01	0.4448507E-02
71929.	-88.76	0.8733560E+00	0.3121321E-02
78444.	-74.43	0.6317055E+00	0.2173688E-02
84954.	-60.11	0.4625101E+00	0.1534441E-02
91460.	-45.79	0.3424495E+00	0.1096832E-02
97963.	-31.49	0.2560857E+00	0.7928156E-03
104461.	-17.19	0.1935590E+00	0.5798790E-03
110955.	-4.71	0.1475329E+00	0.4298683E-03
117445.	0.64	0.1130246E+00	0.3254914E-03
123931.	5.99	0.8686139E-01	0.2472711E-03
130413.	11.34	0.6696443E-01	0.1884654E-03
136890.	15.33	0.5178425E-01	0.1445172E-03
143364.	12.48	0.4004491E-01	0.1124300E-03
149834.	9.64	0.3094113E-01	0.8739699E-04
156299.	6.79	0.2385594E-01	0.6779510E-04
162761.	3.95	0.1838334E-01	0.5256305E-04
169219.	1.10	0.1413913E-01	0.4067706E-04
175672.	-1.73	0.1085819E-01	0.3143170E-04
182122.	-4.57	0.8326232E-02	0.2425266E-04
188567.	-7.41	0.6374536E-02	0.1868423E-04
195009.	-13.09	0.4872816E-02	0.1446420E-04
201446.	-25.48	0.3700939E-02	0.1129918E-04
207880.	-37.87	0.2790877E-02	0.8770911E-05
214309.	-47.20	0.2086170E-02	0.6704598E-05
220735.	-47.20	0.1558023E-02	0.5007223E-05
227156.	-47.20	0.1162933E-02	0.3737470E-05
233573.	-49.66	0.8675198E-03	0.2804819E-05
239987.	-53.19	0.6458548E-03	0.2106267E-05
246396.	-56.72	0.4795248E-03	0.1577516E-05
252802.	-60.24	0.3551359E-03	0.1178611E-05
259203.	-63.76	0.2625126E-03	0.8789640E-06

MIL-STD 210C  
 LOWEST TEMPERATURE AT 10KM  
 1 PERCENT

ALTITUDE	TEMP	PRESSURE	DENSITY
ft	F	in Hg	lb/ft <sup>3</sup>
0.	-32.80	0.3009334E+02	0.9345236E-01
6560.	7.66	0.2295389E+02	0.6511076E-01
13115.	-13.98	0.1752358E+02	0.5211982E-01
19666.	-40.14	0.1319367E+02	0.4168836E-01
26214.	-70.74	0.9729219E+01	0.3316091E-01
32757.	-101.18	0.7000990E+01	0.2588824E-01
39296.	-97.60	0.4982252E+01	0.1824100E-01
45831.	-97.60	0.3544867E+01	0.1297845E-01
52362.	-97.60	0.2526933E+01	0.9251596E-02
58888.	-97.60	0.1800568E+01	0.6592230E-02
65411.	-93.70	0.1284846E+01	0.4653890E-02
71929.	-85.81	0.9227376E+00	0.3271769E-02
78444.	-77.93	0.6673185E+00	0.2317269E-02
84954.	-70.05	0.4858621E+00	0.1653052E-02
91460.	-62.18	0.3562233E+00	0.1187975E-02
97963.	-54.31	0.2626722E+00	0.8589875E-03
104461.	-46.45	0.1947927E+00	0.6248885E-03
110955.	-38.59	0.1455112E+00	0.4580851E-03
117445.	-30.74	0.1092196E+00	0.3375396E-03
123931.	-26.82	0.8235078E-01	0.2522027E-03
130413.	-24.69	0.6219113E-01	0.1895266E-03
136890.	-22.55	0.4703732E-01	0.1426444E-03
143364.	-20.41	0.3564177E-01	0.1075607E-03
149834.	-18.28	0.2704312E-01	0.8121677E-04
156299.	-16.14	0.2055058E-01	0.6142136E-04
162761.	-14.01	0.1563974E-01	0.4652017E-04
169219.	-11.88	0.1191875E-01	0.3528341E-04
175672.	-9.75	0.9098107E-02	0.2680591E-04
182122.	-7.62	0.6952738E-02	0.2038847E-04
188567.	-12.73	0.5316597E-02	0.1576891E-04
195009.	-23.36	0.4041584E-02	0.1227928E-04
201446.	-24.48	0.3059775E-02	0.9320264E-05
207880.	-23.07	0.2317198E-02	0.7035458E-05
214309.	-21.65	0.1759310E-02	0.5324349E-05
220735.	-20.24	0.1336001E-02	0.4030250E-05
227156.	-18.83	0.1015602E-02	0.3053901E-05
233573.	-20.37	0.7724805E-03	0.2331002E-05
239987.	-23.19	0.5866349E-03	0.1781650E-05
246396.	-26.01	0.4445870E-03	0.1359023E-05
252802.	-28.83	0.3365988E-03	0.1035654E-05
259203.	-31.65	0.2543763E-03	0.7878215E-06

MIL-STD 210C  
 LOWEST TEMPERATURE AT 10KM  
 10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-16.60	0.3000434E+02	0.8976918E-01
6560.	4.95	0.2293058E+02	0.6542289E-01
13115.	-16.68	0.1749238E+02	0.5234455E-01
19666.	-40.84	0.1314973E+02	0.4161970E-01
26214.	-67.49	0.9707116E+01	0.3281133E-01
32757.	-94.00	0.7015576E+01	0.2543253E-01
39296.	-94.02	0.5014249E+01	0.1817857E-01
45831.	-100.49	0.3572348E+01	0.1318446E-01
52362.	-106.96	0.2529709E+01	0.9507544E-02
58888.	-113.42	0.1780586E+01	0.6816966E-02
65411.	-119.88	0.1246530E+01	0.4863018E-02
71929.	-126.33	0.8661989E+00	0.3444690E-02
78444.	-121.08	0.6016066E+00	0.2355349E-02
84954.	-115.71	0.4203378E+00	0.1619966E-02
91460.	-110.34	0.2954557E+00	0.1121179E-02
97963.	-104.98	0.2087922E+00	0.7803303E-03
104461.	-94.48	0.1485533E+00	0.5392394E-03
110955.	-78.05	0.1071275E+00	0.3721239E-03
117445.	-61.63	0.7835259E-01	0.2609424E-03
123931.	-45.22	0.5802540E-01	0.1855937E-03
130413.	-28.82	0.4350144E-01	0.1338422E-03
136890.	-12.43	0.3296148E-01	0.9769735E-04
143364.	3.95	0.2523898E-02	0.7216494E-05
149834.	20.32	0.1950716E-01	0.5387400E-04
156299.	36.68	0.1520969E-01	0.4062087E-04
162761.	42.80	0.1193780E-01	0.3149413E-04
169219.	42.80	0.9375135E-02	0.2473335E-04
175672.	42.80	0.7366178E-02	0.1943335E-04
182122.	42.80	0.5785513E-02	0.1526326E-04
188567.	22.37	0.4528790E-02	0.1245407E-04
195009.	-2.43	0.3499078E-02	0.1014429E-04
201446.	-27.21	0.2665839E-02	0.8171619E-05
207880.	-51.99	0.1998606E-02	0.6498591E-05
214309.	-71.74	0.1473362E-02	0.5034691E-05
220735.	-76.33	0.1077179E-02	0.3724985E-05
227156.	-80.93	0.7847850E-03	0.2746763E-05
233573.	-85.52	0.5696504E-03	0.2018246E-05
239987.	-90.10	0.4119519E-03	0.1477633E-05
246396.	-94.00	0.2967069E-03	0.1075607E-05
252802.	-94.00	0.2137047E-03	0.7747119E-06
259203.	-94.00	0.1536917E-03	0.5571558E-06

MIL-STD 210C  
 LOWEST TEMPERATURE AT 20KM  
 1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-33.70	0.3000983E+02	0.9338993E-01
6560.	-9.63	0.2271958E+02	0.6692112E-01
13115.	-31.98	0.1717013E+02	0.5321852E-01
19666.	-54.32	0.1277613E+02	0.4178201E-01
26214.	-76.65	0.9348755E+01	0.3235561E-01
32757.	-87.70	0.6733552E+01	0.2399672E-01
39296.	-87.73	0.4839515E+01	0.1724842E-01
45831.	-96.72	0.3464605E+01	0.1265384E-01
52362.	-105.70	0.2460400E+01	0.9214139E-02
58888.	-114.67	0.131902E+01	0.6654656E-02
65411.	-123.64	0.1208511E+01	0.4767506E-02
71929.	-118.36	0.8417631E+00	0.3269272E-02
78444.	-112.98	0.5897131E+00	0.2254843E-02
84954.	-101.61	0.4166551E+00	0.1542557E-02
91460.	-90.16	0.2977325E+00	0.1068116E-02
97963.	-78.72	0.2149216E+00	0.7478686E-03
104461.	-67.28	0.1567728E+00	0.5296257E-03
110955.	-55.85	0.1153756E+00	0.3787411E-03
117445.	-44.43	0.8565019E-01	0.2734277E-03
123931.	-33.01	0.6411494E-01	0.1992027E-03
130413.	-21.60	0.4837660E-01	0.1463900E-03
136890.	-10.20	0.3676652E-01	0.1084347E-03
143364.	1.19	0.2814912E-01	0.8096706E-04
149834.	12.58	0.2169248E-01	0.6089073E-04
156299.	16.70	0.1680270E-01	0.4675739E-04
162761.	16.70	0.1302265E-01	0.3623854E-04
169219.	16.70	0.1009284E-01	0.2808565E-04
175672.	16.70	0.7824810E-02	0.2177434E-04
182122.	14.00	0.6065147E-02	0.1697375E-04
188567.	5.85	0.4687040E-02	0.1334677E-04
195009.	-2.30	0.3603428E-02	0.1044394E-04
201446.	-18.01	0.2755863E-02	0.8271501E-05
207880.	-35.70	0.2082423E-02	0.6511076E-05
214309.	-50.23	0.1558349E-02	0.5045304E-05
220735.	-55.18	0.1158161E-02	0.3795526E-05
227156.	-60.12	0.8578104E-03	0.2846020E-05
233573.	-65.06	0.6331253E-03	0.2126868E-05
239987.	-70.00	0.4655514E-03	0.1583758E-05
246396.	-74.94	0.3411627E-03	0.1175490E-05
252802.	-79.87	0.2489701E-03	0.8689757E-06
259203.	-84.80	0.1809494E-03	0.6398708E-06

MIL-STD 210C  
 LOWEST TEMPERATURE AT 20KM  
 10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-27.40	0.2996511E+02	0.9189169E-01
6560.	-2.24	0.2270503E+02	0.6579745E-01
13115.	-18.50	0.1726893E+02	0.5188884E-01
19666.	-44.80	0.1295121E+02	0.4138247E-01
26214.	-71.09	0.9533877E+01	0.3252416E-01
32757.	-85.83	0.6886343E+01	0.2448364E-01
39296.	-92.22	0.4940348E+01	0.1782274E-01
45831.	-97.61	0.3527711E+01	0.1291603E-01
52362.	-103.00	0.2507722E+01	0.9320264E-02
58888.	-108.38	0.1773409E+01	0.6692112E-02
65411.	-113.77	0.1247942E+01	0.4782488E-02
71929.	-113.80	0.8758019E+00	0.3356668E-02
78444.	-113.80	0.6147064E+00	0.2355973E-02
84954.	-106.75	0.4331183E+00	0.1626833E-02
91460.	-99.59	0.3072638E+00	0.1131167E-02
97963.	-92.44	0.2196341E+00	0.7928156E-03
104461.	-85.29	0.1580234E+00	0.5595280E-03
110955.	-78.14	0.1144143E+00	0.3975314E-03
117445.	-64.21	0.8358116E-01	0.2801698E-03
123931.	-49.94	0.6174491E-01	0.1997645E-03
130413.	-35.68	0.4608359E-01	0.1440802E-03
136890.	-21.43	0.3475437E-01	0.1051261E-03
143364.	-7.18	0.2644416E-01	0.7747119E-04
149834.	7.05	0.2030208E-01	0.5766328E-04
156299.	15.80	0.1570066E-01	0.4377341E-04
162761.	15.80	0.1216286E-01	0.3391003E-04
169219.	15.80	0.9422188E-02	0.2626904E-04
175672.	15.80	0.7301748E-02	0.2035726E-04
182122.	13.69	0.5657634E-02	0.1584383E-04
188567.	7.31	0.4371852E-02	0.1241037E-04
195009.	0.93	0.3366424E-02	0.9688581E-05
201446.	-14.97	0.2577966E-02	0.7684693E-05
207880.	-33.37	0.1954348E-02	0.6077212E-05
214309.	-47.73	0.1463308E-02	0.4708825E-05
220735.	-49.85	0.1090621E-02	0.3527717E-05
227156.	-53.77	0.8081851E-03	0.2639389E-05
233573.	-56.56	0.6031088E-03	0.1983287E-05
239987.	-62.20	0.4462316E-03	0.1488246E-05
246396.	-57.84	0.3288166E-03	0.1112439E-05
252802.	-73.48	0.2413364E-03	0.8283986E-06
259203.	-79.11	0.1763822E-03	0.6144008E-06

MIL-STD 210C  
HIGHEST DENSITY AT 5KM  
1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-7.60	0.3046480E+02	0.8933220E-01
6560.	-18.41	0.2312801E+02	0.6948061E-01
13115.	-38.26	0.1741229E+02	0.5477294E-01
19666.	-55.31	0.1289922E+02	0.4228766E-01
26214.	-60.70	0.9497696E+01	0.3155656E-01
32757.	-58.90	0.6985013E+01	0.2310402E-01
39296.	-57.10	0.5145200E+01	0.1694253E-01
45831.	-55.31	0.3795172E+01	0.1244159E-01
52362.	-54.40	0.2803620E+01	0.9170441E-02
58888.	-54.40	0.2072656E+01	0.6779510E-02
65411.	-54.40	0.1532544E+01	0.5012842E-02
71929.	-54.40	0.1133090E+01	0.3706257E-02
78444.	-54.40	0.8378417E+00	0.2740520E-02
84954.	-54.40	0.6196974E+00	0.2026986E-02
91460.	-54.40	0.4584272E+00	0.1499483E-02
97963.	-54.40	0.3391445E+00	0.1109317E-02
104461.	-47.81	0.2511736E+00	0.8084222E-03
110955.	-33.18	0.1878724E+00	0.5839368E-03
117445.	-18.55	0.1418613E+00	0.4263100E-03
123931.	-3.94	0.1081235E+00	0.3145043E-03
130413.	10.67	0.8312662E-01	0.2342863E-03
136890.	19.40	0.6438815E-01	0.1781650E-03
143364.	19.40	0.4997187E-01	0.1382745E-03
149834.	19.40	0.3875922E-01	0.1072486E-03
156299.	19.40	0.3009593E-01	0.8327685E-04
162761.	11.78	0.2331194E-01	0.6554774E-04
169219.	2.91	0.1799143E-01	0.5155798E-04
175672.	-5.96	0.1380915E-01	0.4034619E-04
182122.	-14.82	0.1054581E-01	0.3142546E-04
188567.	-23.68	0.8011632E-02	0.2435879E-04
195009.	-32.53	0.6054710E-02	0.1879035E-04
201446.	-37.31	0.4552842E-02	0.1428941E-04
207880.	-40.84	0.3416129E-02	0.1081226E-04
214309.	-44.38	0.2558084E-02	0.8165376E-05
220735.	-47.91	0.1910973E-02	0.6152124E-05
227156.	-51.44	0.1423971E-02	0.4623925E-05
233573.	-58.28	0.1057792E-02	0.3493383E-05
239987.	-66.74	0.7810675E-03	0.2635019E-05
246396.	-75.19	0.5730605E-03	0.1975796E-05
252802.	-83.64	0.4177383E-03	0.1472639E-05
259203.	-92.08	0.3022438E-03	0.1089965E-05

MIL-STD 210C  
HIGHEST DENSITY AT 5KM  
10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-31.00	0.3046247E+02	0.9420146E-01
6560.	-14.84	0.2312694E+02	0.6891876E-01
13115.	-36.46	0.1741684E+02	0.5455445E-01
19666.	-58.07	0.1292278E+02	0.4265597E-01
26214.	-79.58	0.9432910E+01	0.3289872E-01
32757.	-74.55	0.6841064E+01	0.2354725E-01
39296.	-69.51	0.4982878E+01	0.1693005E-01
45831.	-68.44	0.3842468E+01	0.1234170E-01
52362.	-71.31	0.2659211E+01	0.9076802E-02
58888.	-74.18	0.1937003E+01	0.6660899E-02
65411.	-77.05	0.1408154E+01	0.4878624E-02
71929.	-79.91	0.1021336E+01	0.3565173E-02
78444.	-82.78	0.7390564E+00	0.2599436E-02
84954.	-85.64	0.5336997E+00	0.1891521E-02
91460.	-88.51	0.3843648E+00	0.1372757E-02
97963.	-74.77	0.2782317E+00	0.9582455E-03
104461.	-60.48	0.2037790E+00	0.6767024E-03
110955.	-46.20	0.1509412E+00	0.4839296E-03
117445.	-31.93	0.1129645E+00	0.3500874E-03
123931.	-17.67	0.8536293E-01	0.2560107E-03
130413.	-3.41	0.6508236E-01	0.1890896E-03
136890.	8.60	0.5005819E-01	0.1417080E-03
143364.	8.60	0.3861317E-01	0.1093087E-03
149834.	7.09	0.2976209E-01	0.8452537E-04
156299.	3.18	0.2293018E-01	0.6567260E-04
162761.	-0.73	0.1762301E-01	0.5090250E-04
169219.	4.64	0.1351513E-01	0.3937234E-04
175672.	-8.54	0.1034207E-01	0.3038918E-04
182122.	-11.20	0.7898742E-02	0.2334748E-04
188567.	-11.20	0.6029654E-02	0.1782274E-04
195009.	-11.20	0.4604080E-02	0.1360896E-04
201446.	-11.20	0.3516419E-02	0.1039000E-04
207880.	-11.20	0.2684305E-02	0.7934398E-05
214309.	-11.20	0.2051772E-02	0.6064726E-05
220735.	-11.20	0.1567710E-02	0.4633913E-05
227156.	-11.20	0.1197906E-02	0.3540827E-05
233573.	-17.48	0.9143841E-03	0.2741144E-05
239987.	-26.64	0.6943590E-03	0.2125620E-05
246396.	-35.81	0.5241724E-03	0.1639318E-05
252802.	-44.96	0.3933274E-03	0.1257268E-05
259203.	-54.11	0.2933562E-03	0.9588698E-06

MIL-STD 210C  
HIGHEST DENSITY AT 10KM  
1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	71.60	0.3009774E+02	0.7509898E-01
6560.	57.95	0.2385447E+02	0.6109050E-01
13115.	34.96	0.1871610E+02	0.5015963E-01
19666.	9.69	0.1473857E+02	0.4162594E-01
26214.	-22.60	0.1097260E+02	0.3327953E-01
32757.	-54.88	0.8277017E+01	0.2710555E-01
39296.	-87.13	0.6038557E+01	0.2148717E-01
45831.	-89.46	0.4342866E+01	0.1555042E-01
52362.	-91.25	0.3117774E+01	0.1121803E-01
58888.	-90.02	0.2236889E+01	0.8021795E-02
65411.	-85.37	0.1611773E+01	0.5708272E-02
71929.	-80.73	0.1165653E+01	0.4077694E-02
78444.	-76.09	0.8464732E+00	0.2925302E-02
84954.	-71.45	0.6172112E+00	0.2107516E-02
91460.	-64.83	0.4518364E+00	0.1516962E-02
97963.	-55.56	0.3332221E+00	0.1093087E-02
104461.	-46.30	0.2474194E+00	0.7934398E-03
110955.	-37.05	0.1849720E+00	0.5801911E-03
117445.	-27.80	0.1391712E+00	0.4271840E-03
123931.	-18.56	0.1053612E+00	0.3166268E-03
130413.	-9.32	0.8025092E-01	0.2362216E-03
136890.	-0.09	0.6146535E-01	0.1772910E-03
143364.	1.40	0.4724748E-01	0.1358399E-03
149834.	1.40	0.3632585E-01	0.1044394E-03
156299.	1.40	0.2794463E-01	0.8034280E-04
162761.	1.40	0.2149804E-01	0.6180839E-04
169219.	-3.81	0.1651925E-01	0.4803713E-04
175672.	-10.53	0.1264830E-01	0.3733100E-04
182122.	-17.25	0.9646480E-02	0.2890343E-04
188567.	-23.96	0.7327206E-02	0.2229248E-04
195009.	-30.67	0.5543647E-02	0.1712981E-04
201446.	-37.37	0.4176278E-02	0.1310955E-04
207880.	-44.07	0.3133417E-02	0.9994470E-05
214309.	-50.77	0.2339639E-02	0.7584810E-05
220735.	-57.46	0.1739182E-02	0.5731594E-05
227156.	-64.15	0.1286519E-02	0.4311793E-05
233573.	-67.00	0.9477079E-03	0.3199354E-05
239987.	-67.00	0.6980678E-03	0.2356597E-05
246396.	-67.08	0.5141479E-03	0.1736079E-05
252802.	-74.11	0.3778514E-03	0.1299094E-05
259203.	-81.12	0.2759586E-03	0.9663610E-06

MIL-STD 210C  
HIGHEST DENSITY AT 10KM  
10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	60.80	0.3009865E+02	0.7665965E-01
6560.	46.42	0.2370908E+02	0.6210180E-01
13115.	32.04	0.1853650E+02	0.4997235E-01
19666.	1.57	0.1432721E+02	0.4117647E-01
26214.	-28.93	0.1088264E+02	0.3349177E-01
32757.	-59.42	0.8101221E+01	0.2683088E-01
39296.	-89.89	0.5892946E+01	0.2112510E-01
45831.	-90.40	0.4230962E+01	0.1518835E-01
52362.	-90.40	0.3038015E+01	0.1090590E-01
58888.	-86.23	0.2185998E+01	0.7759604E-02
65411.	-81.93	0.1579268E+01	0.5542218E-02
71929.	-77.65	0.1145273E+01	0.3974066E-02
78444.	-73.36	0.8337491E+00	0.2861003E-02
84954.	-69.08	0.6090211E+00	0.2066939E-02
91460.	-64.80	0.4466627E+00	0.1499483E-02
97963.	-60.52	0.3285690E+00	0.1091214E-02
104461.	-56.25	0.2426056E+00	0.7971854E-03
110955.	-51.98	0.1798201E+00	0.5846859E-03
117445.	-47.71	0.1336875E+00	0.4301805E-03
123931.	-37.81	0.9986944E-01	0.3138176E-03
130413.	-27.15	0.7515982E-01	0.2303535E-03
136890.	-16.50	0.5697555E-01	0.1704241E-03
143364.	-5.85	0.4346958E-01	0.1269753E-03
149834.	4.79	0.3339935E-01	0.9532514E-04
156299.	14.90	0.2579046E-01	0.7204009E-04
162761.	14.90	0.1999990E-01	0.5586540E-04
169219.	14.78	0.1550162E-01	0.4331145E-04
175672.	7.00	0.1199045E-01	0.3405986E-04
182122.	-0.78	0.9236262E-02	0.2668105E-04
188567.	-6.55	0.7082858E-02	0.2081297E-04
195009.	-16.32	0.5409834E-02	0.1617468E-04
201446.	-24.08	0.4110797E-02	0.1251026E-04
207880.	-31.84	0.3108777E-02	0.9632397E-05
214309.	-39.77	0.2339270E-02	0.7385046E-05
220735.	-47.34	0.1753604E-02	0.5637730E-05
227156.	-54.87	0.1306400E-02	0.4278083E-05
233573.	-60.14	0.9689591E-03	0.3214961E-05
239987.	-65.42	0.7159193E-03	0.2407163E-05
246396.	-70.69	0.5268332E-03	0.1795384E-05
252802.	-75.95	0.3863416E-03	0.1334677E-05
259203.	-81.22	0.2819500E-03	0.9875860E-06

MIL-STD 210C  
HIGHEST DENSITY AT 20KM  
1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	82.40	0.2984165E+02	0.7297649E-01
6560.	64.45	0.2371721E+02	0.5998554E-01
13115.	46.52	0.1869582E+02	0.4896104E-01
19666.	28.59	0.1461466E+02	0.3967823E-01
26214.	10.68	0.1131859E+02	0.3189990E-01
32757.	-17.80	0.8656458E+01	0.2596939E-01
39296.	-46.43	0.6503782E+01	0.2086291E-01
45831.	-75.03	0.4787411E+01	0.1649930E-01
52362.	-103.62	0.3442288E+01	0.1281614E-01
58888.	-111.40	0.2419123E+01	0.9207896E-02
65411.	-94.27	0.1719732E+01	0.6238897E-02
71929.	-77.15	0.1241341E+01	0.4301805E-02
78444.	-69.35	0.9060115E+00	0.3076999E-02
84954.	-62.22	0.6651933E+00	0.2218635E-02
91460.	-55.10	0.4911628E+00	0.1609353E-02
97963.	-47.99	0.3644788E+00	0.1173617E-02
104461.	-40.88	0.2721647E+00	0.8614846E-03
110955.	-33.77	0.2039779E+00	0.6348767E-03
117445.	-26.67	0.1539136E+00	0.4711946E-03
123931.	-17.74	0.1166064E+00	0.3497752E-03
130413.	-5.33	0.8898619E-01	0.2596315E-03
136890.	7.08	0.6840260E-01	0.1942710E-03
143364.	19.47	0.5295804E-01	0.1465148E-03
149834.	28.40	0.4125718E-01	0.1120554E-03
156299.	28.40	0.3220129E-01	0.8745941E-04
162761.	28.40	0.2514504E-01	0.6829450E-04
169219.	17.91	0.1958914E-01	0.5437341E-04
175672.	7.31	0.1517191E-01	0.4306799E-04
182122.	-3.27	0.1168571E-01	0.3394125E-04
188567.	-13.85	0.8945799E-02	0.2659990E-04
195009.	-24.43	0.6806947E-02	0.2073182E-04
201446.	-35.00	0.5143747E-02	0.1605608E-04
207880.	-45.56	0.3861334E-02	0.1236043E-04
214309.	-56.11	0.2877299E-02	0.9451360E-05
220735.	-66.66	0.2128407E-02	0.7179038E-05
227156.	-77.20	0.1562136E-02	0.5414243E-05
233573.	-87.73	0.1136577E-02	0.4050851E-05
239987.	-98.26	0.8194953E-03	0.3005832E-05
246396.	-108.78	0.5852861E-03	0.2211144E-05
252802.	-119.30	0.4138679E-03	0.1611850E-05
259203.	-116.86	0.2913929E-03	0.1126797E-05

MIL-STD 210C  
HIGHEST DENSITY AT 20KM  
10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	82.40	0.2984165E+02	0.7297649E-01
6560.	62.66	0.2370980E+02	0.6017283E-01
13115.	42.93	0.1866510E+02	0.4922948E-01
19666.	23.21	0.1455595E+02	0.3995915E-01
26214.	3.50	0.1123759E+02	0.3216209E-01
32757.	-25.00	0.8556346E+01	0.2609424E-01
39296.	-53.63	0.6396202E+01	0.2088164E-01
45831.	-82.23	0.4681798E+01	0.1644312E-01
52362.	-110.82	0.3344751E+01	0.1271002E-01
58888.	-119.09	0.2333645E+01	0.9083045E-02
65411.	-103.03	0.1645087E+01	0.6114668E-02
71929.	-86.98	0.1177680E+01	0.4188813E-02
78444.	-74.44	0.8546352E+00	0.2940909E-02
84954.	-66.61	0.6250972E+00	0.2108140E-02
91460.	-58.77	0.4600872E+00	0.1521332E-02
97963.	-50.95	0.3406878E+00	0.1104948E-02
104461.	-43.12	0.2538348E+00	0.8077979E-03
110955.	-35.31	0.1902318E+00	0.5942371E-03
117445.	-27.02	0.1432959E+00	0.4390450E-03
123931.	-14.59	0.1086973E+00	0.3237434E-03
130413.	-2.18	0.8309675E-01	0.2407787E-03
136890.	10.23	0.6399594E-01	0.1805372E-03
143364.	22.62	0.4962678E-01	0.1364017E-03
149834.	34.70	0.3873989E-01	0.1038776E-03
156299.	34.70	0.3033538E-01	0.8134163E-04
162761.	34.70	0.2374681E-01	0.6367495E-04
169219.	27.43	0.1859413E-01	0.5060286E-04
175672.	17.54	0.1447712E-01	0.4021510E-04
182122.	7.66	0.1121514E-01	0.3181250E-04
188567.	-2.22	0.8642899E-02	0.2504548E-04
195009.	-12.09	0.6622659E-02	0.1961438E-04
201446.	-21.95	0.5046161E-02	0.1528199E-04
207880.	-31.81	0.3822308E-02	0.1184229E-04
214309.	-41.66	0.2876022E-02	0.9120501E-05
220735.	-51.50	0.2148987E-02	0.6979274E-05
227156.	-61.34	0.1597088E-02	0.5314985E-05
233573.	-73.35	0.1176722E-02	0.4037741E-05
239987.	-87.38	0.8578390E-03	0.3054525E-05
246396.	-101.41	0.6178268E-03	0.2286056E-05
252802.	-115.43	0.4393194E-03	0.1691756E-05
259203.	-114.88	0.3102888E-03	0.1192969E-05

MIL-STD 210C  
 LOWEST DENSITY AT 5KM  
 1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	47.30	0.2958057E+02	0.7734633E-01
6560.	38.29	0.2317140E+02	0.6168355E-01
13115.	44.60	0.1808827E+02	0.4755020E-01
19666.	15.86	0.1407453E+02	0.3923500E-01
26214.	-12.93	0.1078198E+02	0.3199354E-01
32757.	-41.67	0.8115966E+01	0.2573841E-01
39296.	-70.39	0.5989090E+01	0.2039471E-01
45831.	-85.00	0.4331650E+01	0.1532569E-01
52362.	-85.00	0.3123023E+01	0.1104948E-01
58888.	-82.40	0.2252783E+01	0.7915670E-02
65411.	-77.03	0.1633824E+01	0.5660203E-02
71929.	-71.66	0.1189522E+01	0.4063960E-02
78444.	-66.30	0.8701116E+00	0.2932169E-02
84954.	-60.94	0.6391813E+00	0.2124995E-02
91460.	-55.58	0.4715562E+00	0.1546927E-02
97963.	-50.22	0.3493879E+00	0.1131167E-02
104461.	-44.87	0.2599962E+00	0.8308956E-03
110955.	-39.52	0.1941971E+00	0.6127153E-03
117445.	-29.26	0.1458361E+00	0.4491581E-03
123931.	-18.58	0.1103002E+00	0.3314843E-03
130413.	-7.90	0.8401468E-01	0.2465219E-03
136890.	2.77	0.6439584E-01	0.1845949E-03
143364.	13.43	0.4966100E-01	0.1391485E-03
149834.	24.09	0.3854598E-01	0.1056255E-03
156299.	28.40	0.3004074E-01	0.8159133E-04
162761.	22.22	0.2341969E-01	0.6442406E-04
169219.	11.58	0.1816687E-01	0.5110227E-04
175672.	0.96	0.1400873E-01	0.4031498E-04
182122.	-9.67	0.1074003E-01	0.3163771E-04
188567.	-20.28	0.8183646E-02	0.2468965E-04
195009.	-30.89	0.6194967E-02	0.1915243E-04
201446.	-41.50	0.4657376E-02	0.1476385E-04
207880.	-52.09	0.3477935E-02	0.1131167E-04
214309.	-62.68	0.2576189E-02	0.8602361E-05
220735.	-73.27	0.1894286E-02	0.6498591E-05
227156.	-83.84	0.1381030E-02	0.4871134E-05
233573.	-94.41	0.9979943E-03	0.3621981E-05
239987.	-104.98	0.7144068E-03	0.2669978E-05
246396.	-115.53	0.5064468E-03	0.1950826E-05
252802.	-126.08	0.3551894E-03	0.1411461E-05
259203.	-136.63	0.2464493E-03	0.1011308E-05

MIL-STD 210C  
 LOWEST DENSITY AT 5KM  
 10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft3
0.	60.80	0.2987806E+02	0.7609780E-01
6560.	60.81	0.2363104E+02	0.6018531E-01
13115.	50.04	0.1861943E+02	0.4842417E-01
19666.	23.73	0.1455786E+02	0.3992170E-01
26214.	-7.85	0.1119829E+02	0.3285503E-01
32757.	-39.41	0.8454823E+01	0.2666857E-01
39296.	-70.95	0.6244195E+01	0.2129365E-01
45831.	-85.57	0.4529370E+01	0.1604983E-01
52362.	-93.10	0.3250575E+01	0.1175489E-01
58888.	-93.10	0.2328744E+01	0.8421324E-02
65411.	-79.30	0.1679490E+01	0.5853101E-02
71929.	-69.23	0.1224753E+01	0.4158224E-02
78444.	-64.23	0.8977820E+00	0.3009578E-02
84954.	-59.23	0.6609571E+00	0.2188046E-02
91460.	-54.24	0.4883910E+00	0.1596868E-02
97963.	-49.25	0.3623921E+00	0.1170496E-02
104461.	-44.27	0.2699609E+00	0.8614846E-03
110955.	-39.28	0.2017325E+00	0.6361252E-03
117445.	-34.30	0.1513986E+00	0.4718189E-03
123931.	-24.33	0.1162011E+00	0.3538329E-03
130413.	-13.67	0.8665905E-01	0.2575714E-03
136890.	-3.02	0.6623457E-01	0.1922734E-03
143364.	7.62	0.5094397E-01	0.1445172E-03
149834.	18.26	0.3943213E-01	0.1093711E-03
156299.	20.30	0.3062713E-01	0.8458779E-04
162761.	18.29	0.2379143E-01	0.6598473E-04
169219.	11.21	0.1845187E-01	0.5194503E-04
175672.	4.14	0.1424749E-01	0.4072076E-04
182122.	-2.93	0.1095886E-01	0.3180626E-04
188567.	-10.00	0.8396385E-02	0.2475207E-04
195009.	-17.06	0.6407385E-02	0.1918988E-04
201446.	-27.97	0.4864996E-02	0.1493864E-04
207880.	-40.66	0.3664296E-02	0.1159259E-04
214309.	-53.34	0.2738217E-02	0.8933221E-05
220735.	-66.02	0.2026201E-02	0.6823208E-05
227156.	-78.69	0.1485899E-02	0.5170156E-05
233573.	-86.52	0.1079493E-02	0.3834855E-05
239987.	-90.74	0.7809633E-03	0.2806067E-05
246396.	-94.95	0.5630163E-03	0.2046338E-05
252802.	-99.16	0.4043961E-03	0.1486997E-05
259203.	-103.37	0.2894360E-03	0.1076856E-05

MIL-STD 210C  
 LOWEST DENSITY AT 10KM  
 1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-49.00	0.2987957E+02	0.9644882E-01
6560.	-47.21	0.2220120E+02	0.7135340E-01
13115.	-57.97	0.1641236E+02	0.5416116E-01
19666.	-43.60	0.1214828E+02	0.3870438E-01
26214.	-41.80	0.9046290E+01	0.2869742E-01
32757.	-40.00	0.6745236E+01	0.2130614E-01
39296.	-40.00	0.5035705E+01	0.1590625E-01
45831.	-41.41	0.3758137E+01	0.1191096E-01
52362.	-47.16	0.2797392E+01	0.8989404E-02
58888.	-52.90	0.2074605E+01	0.6760782E-02
65411.	-58.63	0.1532028E+01	0.5064031E-02
71929.	-64.36	0.1126643E+01	0.3778047E-02
78444.	-70.09	0.8250339E+00	0.2807316E-02
84954.	-75.81	0.6014138E+00	0.2076927E-02
91460.	-76.00	0.4374270E+00	0.1511344E-02
97963.	-76.00	0.3181780E+00	0.1099329E-02
104461.	-76.00	0.2314514E+00	0.7996825E-03
110955.	-76.00	0.1685386E+00	0.5823137E-03
117445.	-76.00	0.1226819E+00	0.4238754E-03
123931.	-76.00	0.8931027E-01	0.3085738E-03
130413.	-69.47	0.6519619E-01	0.2214889E-03
136890.	-62.35	0.4786205E-01	0.1596868E-03
143364.	-55.24	0.3534903E-01	0.1158634E-03
149834.	-48.13	0.2624150E-01	0.8452537E-04
156299.	-41.02	0.1959504E-01	0.6204562E-04
162761.	-33.92	0.1470051E-01	0.4577105E-04
169219.	-26.82	0.1108483E-01	0.3394749E-04
175672.	-19.73	0.8397008E-02	0.2530143E-04
182122.	-13.22	0.6389404E-02	0.1897139E-04
188567.	-17.47	0.4866680E-02	0.1458905E-04
195009.	-21.72	0.3695897E-02	0.1118681E-04
201446.	-21.82	0.2804253E-02	0.8489993E-05
207880.	-17.93	0.2130187E-02	0.6392465E-05
214309.	-14.04	0.1623244E-02	0.4828684E-05
220735.	-10.16	0.1239635E-02	0.3655691E-05
227156.	-6.28	0.9490690E-03	0.2774854E-05
233573.	-5.45	0.7281227E-03	0.2124995E-05
239987.	-8.98	0.5579851E-03	0.1641190E-05
246396.	-12.50	0.4268527E-03	0.1265384E-05
252802.	-16.02	0.3257147E-03	0.9732279E-06
259203.	-19.54	0.2481011E-03	0.7472443E-06

MIL-STD 210C  
 LOWEST DENSITY AT 10KM  
 10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-22.00	0.2984477E+02	0.9039345E-01
6560.	-25.26	0.2254409E+02	0.6879392E-01
13115.	-42.55	0.1689508E+02	0.5369296E-01
19666.	-59.79	0.1250208E+02	0.4144491E-01
26214.	-55.47	0.9208950E+01	0.3020190E-01
32757.	-51.16	0.6806337E+01	0.2208647E-01
39296.	-49.00	0.5045683E+01	0.1628705E-01
45831.	-49.00	0.3742199E+01	0.1207951E-01
52362.	-50.77	0.2774795E+01	0.8995648E-02
58888.	-54.36	0.2053781E+01	0.6717083E-02
65411.	-57.94	0.1516878E+01	0.5005350E-02
71929.	-61.52	0.1116921E+01	0.3718742E-02
78444.	-65.10	0.8203565E+00	0.2756126E-02
84954.	-68.68	0.6009874E+00	0.2037598E-02
91460.	-70.60	0.4391862E+00	0.1496361E-02
97963.	-70.60	0.3219233E+00	0.1096832E-02
104461.	-70.60	0.2345258E+00	0.7990581E-03
110955.	-70.60	0.1714970E+00	0.5843113E-03
117445.	-60.59	0.1258422E+00	0.4180073E-03
123931.	-49.90	0.9312803E-01	0.3012699E-03
130413.	-39.21	0.6945984E-01	0.2189919E-03
136890.	-28.53	0.5219986E-01	0.1604983E-03
143364.	-17.86	0.3951042E-01	0.1185478E-03
149834.	-7.20	0.3010842E-01	0.8820854E-04
156299.	3.46	0.2309694E-01	0.6610958E-04
162761.	5.00	0.1779488E-01	0.5076517E-04
169219.	5.00	0.1370722E-01	0.3910391E-04
175672.	3.30	0.1055896E-01	0.3023311E-04
182122.	-2.02	0.8116526E-02	0.2350979E-04
188567.	-7.33	0.6222304E-02	0.1823476E-04
195009.	-12.64	0.4753520E-02	0.1409589E-04
201446.	-17.94	0.3621630E-02	0.1086844E-04
207880.	-23.25	0.2749896E-02	0.8352656E-05
214309.	-28.09	0.2083246E-02	0.6398709E-05
220735.	-31.27	0.1573623E-02	0.4869260E-05
227156.	-34.44	0.1186288E-02	0.3698141E-05
233573.	-37.62	0.8926129E-03	0.2803571E-05
239987.	-40.79	0.6702975E-03	0.2121250E-05
246396.	-43.96	0.5023449E-03	0.1601862E-05
252802.	-47.13	0.3757331E-03	0.1207327E-05
259203.	-32.29	0.2928382E-03	0.9083044E-06

MIL-STD 210C  
 LOWEST DENSITY AT 20KM  
 1 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-36.40	0.2993921E+02	0.9376448E-01
6560.	-21.13	0.2257252E+02	0.6823208E-01
13115.	-46.35	0.1691456E+02	0.5424856E-01
19666.	-71.55	0.1244343E+02	0.4249991E-01
26214.	-81.39	0.8999670E+01	0.3153783E-01
32757.	-76.00	0.6518944E+01	0.2252345E-01
39296.	-76.00	0.4733823E+01	0.1635572E-01
45831.	-76.00	0.3438346E+01	0.1187975E-01
52362.	-69.79	0.2500674E+01	0.8502478E-02
58888.	-57.24	0.1835639E+01	0.6046623E-02
65411.	-28.74	0.1367979E+01	0.4208165E-02
71929.	-7.94	0.1038555E+01	0.3047658E-02
78444.	-13.31	0.7909933E+00	0.2349106E-02
84954.	-18.68	0.6003913E+00	0.1804748E-02
91460.	-24.04	0.4544071E+00	0.1382745E-02
97963.	-29.40	0.3426412E+00	0.1055631E-02
104461.	-31.00	0.2577905E+00	0.7971854E-03
110955.	-31.00	0.1940999E+00	0.6002301E-03
117445.	-31.00	0.1460746E+00	0.4517176E-03
123931.	-31.00	0.1099597E+00	0.3400367E-03
130413.	-31.00	0.8276751E-01	0.2559483E-03
136890.	-31.00	0.6231788E-01	0.1927104E-03
143364.	-28.24	0.4695331E-01	0.1442675E-03
149834.	-21.13	0.3552183E-01	0.1073734E-03
156299.	-14.02	0.2698903E-01	0.8028038E-04
162761.	-6.92	0.2060276E-01	0.6032265E-04
169219.	-0.40	0.1579510E-01	0.4559001E-04
175672.	-0.40	0.1154731E-01	0.3332946E-04
182122.	-5.01	0.9311744E-02	0.2714925E-04
188567.	-10.68	0.7123515E-02	0.2103146E-04
195009.	-16.34	0.5432358E-02	0.1624336E-04
201446.	-22.00	0.4128389E-02	0.1250401E-04
207880.	-27.66	0.3126967E-02	0.9594942E-05
214309.	-30.48	0.2360706E-02	0.7291406E-05
220735.	-32.25	0.1782367E-02	0.5527860E-05
227156.	-34.01	0.1343631E-02	0.4184443E-05
233573.	-36.95	0.1011464E-02	0.3171886E-05
239987.	-40.48	0.7598241E-03	0.2402793E-05
246396.	-44.00	0.5694347E-03	0.1815985E-05
252802.	-47.52	0.4258362E-03	0.1369636E-05
259203.	-51.04	0.3177100E-03	0.1030660E-05

MIL-STD 210C  
 LOWEST DENSITY AT 20KM  
 10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	-45.40	0.2998543E+02	0.9594940E-01
6560.	-36.42	0.2242327E+02	0.7022972E-01
13115.	-47.26	0.1670227E+02	0.5368672E-01
19666.	-65.28	0.1230820E+02	0.4136999E-01
26214.	-83.20	0.8944261E+01	0.3149413E-01
32757.	-83.20	0.6451570E+01	0.2271697E-01
39296.	-83.22	0.4655336E+01	0.1639518E-01
45831.	-90.41	0.3349180E+01	0.1202333E-01
52362.	-95.80	0.2393842E+01	0.8720971E-02
58888.	-95.80	0.1709961E+01	0.6229532E-02
65411.	-95.80	0.1220911E+01	0.4447883E-02
71929.	-88.76	0.8733560E+00	0.3121321E-02
78444.	-74.43	0.6317055E+00	0.2173688E-02
84954.	-60.11	0.4625101E+00	0.1534441E-02
91460.	-45.79	0.3424495E+00	0.1096832E-02
97963.	-31.49	0.2560857E+00	0.7928156E-03
104461.	-17.19	0.1935382E+00	0.5798166E-03
110955.	-4.71	0.1475115E+00	0.4298059E-03
117445.	0.64	0.1130030E+00	0.3254289E-03
123931.	5.99	0.8686139E-01	0.2472711E-03
130413.	11.50	0.6698745E-01	0.1884654E-03
136890.	15.33	0.5178425E-01	0.1445172E-03
143364.	12.48	0.4004491E-01	0.1124300E-03
149834.	9.64	0.3094113E-01	0.8739699E-04
156299.	6.79	0.2385594E-01	0.6779510E-04
162761.	3.95	0.1838116E-01	0.5255680E-04
169219.	1.10	0.1413696E-01	0.4067081E-04
175672.	-1.73	0.1085603E-01	0.3142546E-04
182122.	-4.57	0.8326232E-02	0.2425266E-04
188567.	-7.41	0.6374536E-02	0.1868423E-04
195009.	-13.09	0.4872816E-02	0.1446420E-04
201446.	-25.48	0.3700939E-02	0.1129918E-04
207880.	-37.87	0.2790877E-02	0.8770911E-05
214309.	-47.20	0.2086170E-02	0.6704598E-05
220735.	-47.20	0.1558023E-02	0.5007223E-05
227156.	-47.20	0.1162739E-02	0.3736846E-05
233573.	-49.66	0.8675198E-03	0.2804819E-05
239987.	-53.19	0.6456634E-03	0.2105643E-05
246396.	-56.72	0.4795248E-03	0.1577516E-05
252802.	-60.24	0.3551359E-03	0.1178611E-05
259203.	-63.76	0.2625126E-03	0.8789640E-06

MIL-STD 210C  
SUPPLEMENTARY HIGH TEMPERATURE  
AND LOW DENSITY VALUES FOR  
WORLDWIDE AIR ENVIRONMENT  
10 PERCENT

ALTITUDE ft	TEMP F	PRESSURE in Hg	DENSITY lb/ft <sup>3</sup>
0.	113.00	-	-
3280.	100.00	0.2765399E+02	0.6550000E-01
6560.	82.00	0.2357735E+02	0.5770000E-01
13115.	55.00	0.1890786E+02	0.4870000E-01
19666.	37.00	0.1483705E+02	0.3960000E-01
26214.	16.00	0.1083671E+02	0.3020000E-01
32757.	-2.00	0.7630084E+01	0.2210000E-01
39296.	-22.00	0.5381692E+01	0.1630000E-01
45831.	-33.00	0.3862406E+01	0.1200000E-01
52362.	-38.00	0.2780153E+01	0.8740000E-02
58888.	-38.00	0.1981733E+01	0.6230000E-02
65411.	-38.00	0.1412343E+01	0.4439999E-02
71929.	-36.00	0.9971646E+00	0.3120000E-02
78444.	-38.00	0.7348001E+00	0.2310000E-02
84954.	-35.00	0.4805376E+00	0.1500000E-02
91460.	-27.00	0.3055042E+00	0.9360000E-03
97963.	-18.00	0.2578834E+00	0.7740000E-03
114200.	9.00	0.1212679E+00	0.3430000E-03
130413.	41.00	0.5249899E-01	0.1390000E-03
146599.	59.00	0.2637154E-01	0.6740000E-04
162761.	68.00	0.1353399E-01	0.3400000E-04
178898.	46.00	0.6141544E-02	0.1610000E-04
195009.	27.00	0.2863609E-02	0.7799999E-05
211095.	37.00	0.1363810E-02	0.3640000E-05
227156.	39.00	0.7185072E-03	0.1910000E-05
243192.	7.00	0.3143734E-03	0.8929999E-06
259203.	-2.00	0.1294697E-03	0.3750000E-06